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*Illustrated.

Car Construction in 1914

Probably the most interesting feature of the figures for car construction in 1914 is the increase in the number of all-steel box cars built, the greater part of which is due to the adoption of the all-steel type of construction on the Pennsylvania Railroad. It will be noticed also that there is a considerable increase over 1913 in the number of steel underframe box cars built, while the number of steel frame box cars falls off materially. At first glance it might seem that the steel frame construction is losing in popularity, but there may be other explanations for these figures. In a year of depression like the one just past many of the railroads order little or no equipment, so that the cars built are for a comparatively few roads and it is difficult to point to any definite tendency which is indicated by the construction figures. There is also an increase in the number of steel underframe passenger cars built, but most of these were built for a comparatively few roads, some of which favor this type of construction. The all-steel car preponderates, although there is a falling off in the total number of cars built. Of the wooden passenger equipment cars, the greater proportion were milk, refrigerator, and cars for other special service.

Increased Capacity in Existing Locomotives

The ever pressing need of greater trainloads has increased locomotive dimensions and capacities so rapidly that the large locomotives of a few years ago, which the more modern equipment replaces, have developed a serious problem for the motive power and operating departments to solve. There are numbers of these locomotives which possess more capacity than is needed for way-freight or branch line service, yet in many cases it has been necessary to place them in such service, as well as in switching. Many of these engines are capable of developing a maximum tractive effort which will start very heavy trains, but are deficient in boiler capacity and are therefore incapable of economically hauling such trains for any distance. If there were some way of increasing the steam making capacity of such locomotives they could take their place in heavy main line service; in fact, such an increase in boiler capacity could very easily obviate the necessity of a road's making considerable expenditures for new locomotives of greater capacity. The difficulties attending the use of superheated steam with slide valves and the expense necessary in applying piston valve cylinders have prevented the use of superheaters in many such instances. Of the past year's locomotive development, therefore, perhaps the one of most direct interest to railways is that which has shown the possibilities of increased capacity obtainable from existing locomotives. It is now possible to apply piston valves without going to the extent of entirely new cylinder and saddle castings, and the use of the superheater and the brick arch, even on narrow firebox locomotives, has given remarkable results in increased hauling capacity. It is therefore probable that the immediate future will see the modernizing of the large locomotives of a few years ago, in considerable numbers.

The Electrification of Steam Roads in 1914

The past year has witnessed marked progress both in the adoption of electric operation on existing steam roads and in the design of transmission and motor equipment. The important improvements in the equipment are discussed on another page by N. W. Storer. There was completed the first year of electric operation of the Butte, Anaconda & Pacific where heavy tonnage ore trains have been handled regularly on steep grades with marked reductions in operating costs. The New York, New Haven & Hartford also finished the electrification of its four-track main line into New Haven. The Chicago, Milwaukee & St. Paul is proceeding with the electrification of the first engine district of 114 miles from Harlowton, Mont., to Deer Lodge, crossing the Rocky mountains, which is the first step in the electrification of 440 miles of main line extending west to Avery, Idaho. The trolley poles have been erected for a considerable distance and a contract was given recently for 12 electric locomotives and substation equipment. It is expected that the first district will be completed for operation late next fall. The Norfolk & Western is engaged in the electrification of 30 miles of its line between Bluefield, W. Va., and Vivian. The power house and overhead construction are completed, and the first locomotive tests are now being conducted. Another large project now under construction involves the electrification of 80 miles of suburban tracks on the Paoli subdivision of the Pennsylvania in the suburbs of Philadelphia. This project is also approaching completion, and if successful will undoubtedly lead

to the electrification of other suburban lines of the same road in this vicinity. The Canadian Northern is completing the electrification of its new entrance into Montreal through Mt. Royal tunnel. Another interesting project on which electrical studies have not yet been completed is that of the operation of the five-mile tunnel of the Canadian Pacific at Rogers Pass, B. C. Upon its completion late in 1916 it will be operated electrically.

Thus, it is evident that the electrification of steam roads is making steady progress. At present over 2,250 miles of such tracks have been converted for electric operation and over 280 electric locomotives are employed regularly in addition to motor cars, etc.

SOME REASONS FOR OPTIMISM

EVERYBODY directly or indirectly connected with the railway industry should enter the year 1915 with a feeling of optimism. The year which closed yesterday was certainly a most unsatisfactory one in the railway business and the railway supply business. The situation in these industries was bad enough before the war began. The decline in total railway operating revenues per mile in the fiscal year ended on June 30, 1914, was less than 3½ per cent; in other words, the total loss of traffic was comparatively small. But the total operating revenues did not reflect the true condition of the railway business. There were very heavy increases in operating expenses due to advances in wages. There were very heavy increases in taxes. Such increases in expenses and taxes had been going on for years. There had been no advances in rates to offset them. The consequence was that affairs in the railway business got sadly out of joint, and demoralization ensued. This demoralization in the railway business produced a terrible effect on the railway supply business, and a less serious, but nevertheless serious, effect on other classes of business concerns.

While the total operating revenues per mile in the fiscal year 1914 declined less than 3½ per cent, the net operating income per mile declined almost 16 per cent; and this in spite of the fact that the most strenuous efforts were made by the railway managers to curtail expenses. They were unable to pay the increased taxes and to meet the advances in wages, while at the same time employing the same number of men and making the same expenditures for equipment and supplies as before. To offset the increases in wages and taxes they laid off as many employees as they could and cut their purchases as much as they could. What was the result? In 1914 the total wages paid were greater than in any preceding year, but these total wages were paid to a very much smaller number of men than were employed in the preceding year. We have secured from the railways entering Chicago, and published on another page, statistics showing the reduction which they made in the numbers of their employees in the year ending August 1, 1914. This date was chosen for comparative purposes because it was the one on which the great war in Europe began, and therefore, up to that time the condition of the railway business in this country had not been affected by the war. As our statistics show, the railways entering Chicago had before the war began reduced the number of their employees by 91,000. The situation on the roads entering Chicago unquestionably was typical of the situation on all the railways of the country, and if this was the case, then on August 1, 1914, the railways of the United States had on their payrolls almost 200,000 less men than they had a year before.

The effect of the curtailment of railway purchases was even more serious in proportion. We have also collected, and publish elsewhere, statistics showing the number of men normally employed and the number employed on August 1, 1914, by a large number of representative railway supply concerns throughout the United States. These figures show that before the war in Europe began these concerns were employing 40 per cent less men than they do normally. Doubtless their condition was typical of that of railway supply concerns in general.

Needless to say, the effect of the situation in the railway and railway supply businesses was felt throughout every other line of business in America. The hundreds of thousands of men who were out of employment in these industries had their power to buy from the retail merchant greatly curtailed. This affected the ability of the retail merchant to buy from the wholesale merchant. This affected the ability of the wholesale merchant to buy from the manufacturer. There resulted a general dislocation of industry, and unemployment all along the line, from the railway at one end to the purchasers of all kinds of raw materials at the other. The conditions have grown much worse since the war began. The number of men in the railway and railway supply businesses out of employment is much greater now than it was on August 1. But this aggravation of the situation is attributable to the war.

What were the causes of the conditions prevailing in the railway and railway supply businesses before the war began? They were partly due to the decline in traffic; but this decline was relatively small. They were due chiefly to the fact that, not only in the fiscal year 1914, but for some years before, there had been heavy increases in wages, taxes and the rate of interest which the railways had not been permitted to offset by increases in their rates. That was the main and fundamental thing that was wrong with the railway business. That was the main cause of the reduction in net operating income. That has been the main cause of unemployment in the railway business. That has been the main cause of the reduction in railway purchases and of unemployment in the railway supply business. And that probably has been the main cause of the industrial depression which so long has been felt in every line of business.

Now, what has happened to justify us in saying that everybody directly or indirectly connected with the railway industry should enter the year 1915 with a feeling of optimism?

For years the spokesmen of the railways and students of their business had been endeavoring to show the public, the press and the Interstate Commerce Commission that it was only a matter of time until disaster would overtake the railways and the other industries of the country if railway expenses and taxes continued to increase and the roads were not allowed to deal with these tendencies by advancing their rates. It long seemed impossible to make the public, the press and the commission recognize the facts and act accordingly. This was the cause, and a justifiable cause, of the pessimism regarding the future of the railways which prevailed widely. During the last year that ground for pessimism has been removed. The public and press were brought to a full realization of the facts. The Interstate Commerce Commission showed by its decision on July 29 that it had become aware of the situation, and it showed this more fully still in its recent decision in the reopened 5 per cent rate case. The commission did not give the railways all that they asked for, or thought they were entitled to receive, but it did assent unreservedly to the proposition that the net earnings of the eastern railways had become too low. It accepted the view of the railway managers as to the reasons for this, and it has given the railways some of the advances in rates they asked for and some they did not ask for. It is to be regretted, no doubt, that the commission did not go farther. But the problem with which the commission is dealing is a big problem. Being a big one, it cannot be solved in a day. The important thing was to get the commission to realize and concede that the railways must have advances in their rates and to grant some of the needed advances. The commission has now granted some advances in the eastern rates, and there is strong reason for believing that it will grant further increases both on the eastern and western roads if the cases are properly presented to it and to the public. We add, "and to the public," because the developments have shown that the railways must try their cases before the bar of public opinion as well as before the commission and the courts. And one of the encouraging features of the situation is that those who led the railways in their contest for rate advances in the east demonstrated that

they had learned how to try their case before the court of public opinion.

In another column of this issue Chairman Kruttschnitt of the Southern Pacific discusses the subject, "Whither Are the Railways Drifting?" Mr. Kruttschnitt shows clearly the serious conditions with which the railways are confronted. But he also expresses confidence that the outcome will be the success and continuance of private ownership and management subject to public regulation. Doubtless there will be no great and immediate change in business conditions. Doubtless improvements will come slowly. But, on the other hand, doubtless the decisions of the commission in the 5 per cent case marked the beginning of a change in our policy of regulation. That such a change cannot fail in a comparatively short time to prove beneficial to the railways and all related industries and ultimately to all the industries of the country, can not be intelligently questioned. The campaign for fair regulation and for the benefits it will confer has not been finished. But after many battles have been lost a great battle at last has been won. If the entire campaign for fair regulation is to be ultimately successful it must be pushed on both vigorously and courageously, but that it will be the *Railway Age Gazette* has no doubt.

It is only a matter of time until traffic in general will begin to increase. The trouble in the past has been that whether traffic increased or not, expenses and taxes increased more in proportion, and, therefore, net earnings tended to decline. Under a policy of fair regulation, which will give the railways the advances in rates that they need, increases in traffic will be accompanied by proportionate increases in net earnings. And reasonable increases in net earnings will restore prosperity to the railway and railway supply businesses, give back their jobs to the hundreds of thousands of men in these industries who are now out of employment and exert a salutary influence on the industry of the United States in general.

RAILWAY CONSTRUCTION IN 1914

THE mileage of new lines built is generally considered one index of the conditions existing in the railway industry. The marked decrease in the mileage built in 1914, as indicated in the statistics published in another column, would therefore lead one to believe that 1914 was an unusually bad year for the railways. The new mileage constructed was only half as much as in the previous year, and was the least for any year since 1895. While a reduction was expected by everyone, its extent will surprise even many closely in touch with conditions. For the first time more mileage was built in Canada in 1914 than in the United States, although Canada was only 60 miles behind the United States in 1913. This is the first time, in fact, that any country in the world has exceeded the United States in this regard.

Another significant feature of last year's record is the completion of many large projects which have been under way for two or more years, such as the Magnolia cut-off of the Baltimore & Ohio, the new lines of the Louisville & Nashville in Tennessee, Alabama and Kentucky, the new lines of the Northern Pacific from Tacoma, Wash., to Tenino, and the extensive double track work of the Chicago, Milwaukee & St. Paul in Iowa. These projects were all undertaken before the depression of the last year was felt so keenly, and it was advisable to carry them through to secure a return on the large sums already spent. Bearing this in mind, one can see that, even the low figures for 1914 do not indicate fully the depression which has existed in railway construction.

This condition is not surprising in view of the increasing difficulties under which the railways have been laboring. The continuance of unfavorable agitation and legislation, the attitude of the employees as evidenced in the demands for full crew laws, and the decreasing business in the face of increasing costs of materials and labor, have all served to make the railways hesitate before authorizing large investments for extensions to reach new territories or for costly improvements in existing facilities. A study of the detailed statistics shows that no long extensions were built last year and that a large proportion of the new mileage was composed of short lines to reach traffic which already existed.

While the decrease in the mileage of new multiple main tracks built reflects the same general unsatisfactory conditions, it also indicates that the present railway facilities are not being taxed to their capacity. Following the traffic congestion of 1906 and 1907, and of 1910, the roads spent large sums in the construction of new terminals and additional main tracks to enable them to handle the increasing traffic quickly and economically. As a result they have a plant capable of handling more business than is actually being offered to it now, and the demand for more multiple main tracks is not so urgent.

The distribution of new mileage between the different states last year is interesting and shows a tendency evidenced in recent years. If the country is divided into four groups, the territory west of and including Colorado leads with over 645 miles of new line. Next to this the largest mileage was built in that portion of the country south of the Ohio and east of the Mississippi rivers, where 485 miles of new road was built last year. Less than 125 miles was built east of Chicago and north of the Ohio river. The relatively active construction in the far west and in the southeast is in accord with the comparatively rapid development of these areas. This undoubtedly accounts for Florida leading the country in new mileage, as large areas have been made available for cultivation by the reclamation of swamp lands in recent years.

Less than 280 miles of new line was completed in the states lying between Chicago and the Rocky mountains, and over 100 miles of this was in North and South Dakota. In Texas, which for a number of years led in the amount of new line constructed, only 51 miles was built, as compared with 356 miles in the previous year, while in Oklahoma only 4 miles was built. The figures for some of the other states in this area—Kansas, 11 miles; Missouri, 4 miles; Nebraska, 1 mile; Iowa, 26 miles—are equally instructive, when it is remembered that these states have led in the passage of drastic regulatory measures. While the development of these states, and especially of Texas and Oklahoma, is retarded by the lack of railway facilities, it is only reasonable to expect that this condition will exist so long as the law makers and commissioners maintain their present attitude.

While the mileage of new lines completed in Canada in 1914 shows a decrease of over 1,000 miles as compared with 1913, it is larger than for any year previous to 1912. The decrease last year is an indication that the unusually rapid development of western Canada, in which the railways have led in the opening up of new territories, is returning to a normal basis. The pushing of the coast extensions of the Grand Trunk Pacific and the Canadian Northern also aided considerably in increasing the figures for 1913.

It is very difficult at this time to predict what the new year will produce. At present there is probably less construction work under way than at any time within the present generation. But the general cessation of construction activities in the past three or four years, during which time the population and the industries of the country have been steadily growing, the recent favorable action of the Interstate Commerce Commission in the rate advance case, indicating a greater realization of the needs of the roads on the part of this and other commissions, and the changing public sentiment, as indicated in the nullification of the Missouri full crew law by referendum vote, indicate that the coming year may be one of considerably increased activity along construction lines. More work than ever before remains to be done which the railways desire to undertake whenever they are in a position to obtain the necessary funds are available at reasonable rates.

LOCOMOTIVE DEVELOPMENT IN 1914

THE number of locomotives built in the calendar year 1914 was 1,265, which is the lowest of any year since 1897, when the number built was 1,251, and constitutes a marked falling off from 1913, when there were 5,332 built. The falling off in building was of course due to the general business depression, but the poor business conditions have by no means eliminated developments tending toward the improvement of the locomotive.

A year ago we referred to what is without doubt the highest development of the Atlantic type locomotive, embodied in the latest engine of that type built by the Pennsylvania Railroad. These locomotives were largely the result of long continued experiments along the lines of refinement in design and increase in boiler capacity. A number of them have been built and are in daily service hauling very heavy trains on extremely fast schedules. The same policy which resulted in the production of this Atlantic type locomotive has, during the past year, produced on the Pennsylvania a Mikado and a Pacific type locomotive which are especially noteworthy. Interchangeability of parts has been carried out in these two locomotives to a considerable extent, the boilers of the two engines being identical. On the testing plant at Altoona the Pacific type locomotive recently developed approximately 3,200 horsepower, a truly remarkable figure, and in this connection it is interesting to note that this horsepower was obtained when the locomotive was equipped with a type of exhaust tip having four internal projections, and that the horsepower obtainable with the ordinary form of exhaust tip was considerably less.

Heat treated steel takes a prominent place in the design of the Pennsylvania locomotives, and of locomotive design in general it may be said that alloy steels continue in favor for such parts as axles, crank pins, main and side rods, frames and springs.

The large locomotive is again to the fore in 1914. The Pacific type locomotives built by the American Locomotive Company for the Chesapeake & Ohio lead in point of total weight for this type, this being 312,600 lb., while the maximum tractive effort of 46,600 lb. developed by these engines is also the greatest for this type. The heaviest locomotive of the Mikado type of which we have record is also a Chesapeake & Ohio engine and weighs 322,500 lb. The Baldwin Locomotive Works built during the year for the Baltimore & Ohio a 2-10-2 type locomotive which has a total weight of 406,000 lb., and is the heaviest locomotive ever built on a single set of drivers. The world's record for large locomotives was again broken by the construction for the Erie Railroad by the Baldwin Locomotive Works of a 2-8-8-8-2 type, Triplex compound articulated locomotive using the weight of the tender for adhesion and having a total weight of 853,000 lb. This locomotive has a theoretical maximum tractive effort of 160,000 lb. and has hauled a train of 251 loaded cars weighing 17,912 tons. A few locomotives of the Mountain, or 4-8-2 type, were built during the year, but they are intended for service under special conditions and there does not seem to be any general tendency to go beyond the Pacific type for hauling heavy passenger trains.

The mechanical stoker has taken a prominent place in increasing locomotive capacity, and there are a number of locomotives now in service which would not have been built had it not been possible to fire them by mechanical means. On large hand-fired locomotives the use of coal pushers in the tender, for moving the coal forward within the reach of the fireman, has greatly increased.

During the year experiments have been completed resulting in the successful use of powdered coal in locomotive fireboxes, and while the results of these experiments are not yet available it is probable that when published they will prove of very considerable interest and value.

The large locomotive is likely to continue in favor in new construction, although it may be doubted that the two-cylinder type can be carried much beyond present dimensions because of limitations in clearance. The possibilities in the use of three cylinders were brought out recently in a discussion before the American Society of Mechanical Engineers by J. B. Ennis, chief mechanical engineer of the American Locomotive Company, and it would not be surprising to see steps taken in the near future toward developing large locomotives with this cylinder arrangement. With few exceptions the compound locomotive has gained nothing in favor during the past year, although the Mallet type continues in use for the particular classes of work for which it is suited, and it is of special interest to note that a large locomotive of this type which was built by the American Locomotive Company in 1912 for the Virginian Railway has developed in service a horsepower somewhat over 3,000. This power is noteworthy when it is considered that it was necessarily developed at low speed.

For the future it may be said that further economies will probably develop from superheating, and while the use of feed water heaters in America has thus far been only of an experimental nature, the results obtained are promising and would seem to indicate its development before long toward an extensive use. Considered from all standpoints the locomotive development of the immediate future will probably continue along the lines of increased capacity through the means of refinement in design and the application of economy producing features and those which tend directly to increase boiler capacity.

RECEIVERSHIPS AND FORECLOSURE SALES

IN 1896 there was a greater mileage of railroad in the United States in the hands of receivers than in any other year since that time. In that year according to the Interstate Commerce Commission's figures, 30,475 miles of road were being operated under receiverships. At the end of December, 1914, according to the compilation which has been made by the *Railway Age Gazette*, 21,048 miles of road, with a total funded debt of $830,728,790 and a total capital stock of $434,599,738, was in the hands of receivers. During the calendar year 1914, 22 roads, with a total mileage of 4,222, with a funded debt of $137,250,296, and with a capital stock of $62,321,150 were put

RECEIVERSHIPS ESTABLISHED IN 1914

Name of Company.	Mileage.	Funded Debt Outstanding.	Stock Outstanding.
Arkansas Southeastern	30	$500,000	$500,000
Blakely Southern	22	77,156	.....
Cape Girardeau & Northern	104	1,500,000	110,000
Chic., Peoria & St. Louis	245	2,000,000	4,000,000
Cincinnati, Hamilton & Dayton *b*	1,015	62,135,640	8,248,575
Columbus & Southern	23	500,000	2,000,000
Florida, Alabama & Gulf	25	.....	.....
Gould Southwestern	25	.....	51,000
International & Great Northern *c*	1,106	24,594,500	4,822,000
Kane & Elk	15	9,000	75,000
Kans. City & Memphis	58	796,000	852,000
Liberty-White	50*f*	250,000	1,300,000
Marietta, Columbus & Cleveland	49	250,000	250,000
Muscatine North & South	54	890,000	1,000,000
Ohio River & Columbus	24	85,000	501,000
Opelousas, Gulf & No.-East	57	1,143,000	1,421,475
San Antonio, Fredericksburg & Northern	25	.....	.....
San Antonio, Uvalde & Gulf	316	3,663,000	230,000
Texas Mexican *d*	161	1,380,000	2,500,000
Toledo, St. Louis & Western	450	28,027,000	19,947,600
Trinity & Brazos Valley *e*	303	8,760,000	304,000
Wabash, Chester & Western	65	690,000	1,250,000
Total	4,222	137,250,296	62,321,150

a The company had only a few miles of track laid, but some terminals at Martin Point, Alaska.

b Under an agreement made in 1909 the Baltimore & Ohio guaranteed principal and interest of $12,500,000 first and refunding mortgage 4 per cent bonds of the Cincinnati, Hamilton & Dayton, and of these bonds there were $7,500,000 outstanding in the hands of the public at the time of the receivership in July. In addition, the Baltimore & Ohio had advanced $3,900,000 for construction purposes, taking as collateral $4,861,000 of these bonds, and in addition the Baltimore & Ohio had advanced $1,800,000 for equipment, $1,200,000 for reconstruction of property destroyed by the flood, and $3,200,000 for general treasury purposes.

c Arrangements had been made with the Jay Gould estate by which the $11,000,000 3-year 5 per cent notes, which fell due August 1, were to have been extended for two and a half years at 6 per cent, but the war and subsequent disturbance of the financial markets generally led to an appointment of a receiver.

d The receivership, it was said, was brought about through the refusal of the National Railways of Mexico to reopen the bridge across the Rio Grande at Laredo, Tex. All of the securities, both bonds and stocks, are owned by the National Railways of Mexico.

e Half of the stock of this company is owned by the Colorado & Southern and the other half by the Chicago, Rock Island & Pacific or subsidiaries.

(*f*) The road had, it is understood, abandoned its schedules and was delivering mail by automobile. The receivership proceedings were at the request of the stockholders.

into the hands of receivers. As will be seen from the comparison of the roads placed in the hands of receivers during each one of the years of which a record has been kept by the *Railway Age Gazette*, there have been only one year in which a greater mileage of road went into bankruptcy, and no year since 1896 in which there was as great a mileage in the hands of receivers. Whereas, however, 1896 was not the culmination of a period of depression, but was the beginning of better times, and by 1898 the mileage in the hands of receivers was reduced to 12,744, 1914 shows no tendency toward improvement, but a continuance of the downward tendency. There were only eight roads which were taken out of the hands of receivers in 1914, and none of these were important.

Of the roads that went into the hands of receivers in 1914 the two most important were the Cincinnati, Hamilton & Dayton, operating 1,015 miles of road, and the International & Great Northern, operating 1,106 miles of road. The immediate cause of the Cincinnati, Hamilton & Dayton receivership was the road's inability to recover from the effects of the flood of the year before and the Baltimore & Ohio's unwillingness to jeopardize its own position by making further advances to its controlled road at a time when its own credit was put to so severe a strain by business depression and the war. The immediate cause of the International & Great Northern receivership was the European war and the inability of the company to refund $11,000,000 notes which fell due August 1.

The Cincinnati, Hamilton & Dayton was taken out of the

FORECLOSURES IN 1914.

Name of Company.	Mileage.	Funded Debt Outstanding.	Stock Outstanding.
Chicago, Anamosa & Northern	36	.....	$112,000
Florida Central	47	$500,000	50,000
Greenville & Knoxville	23	460,000	260,000
Kansas City, Mexico & Orient	973	29,348,000	26,000,000
Lancaster, Oxford & Southern	28	250,000	200,000
Laramie, Hahn's Peak & Pac.a	111	4,636,000	10,000,000
New Mexico Central	116	2,500,000	2,500,000
Oklahoma Central	136	3,180,000	3,193,500
Total	1,470	40,874,000	42,315,500

a Sold in two sections, but to the same parties, the Wyoming section being sold for $500,000 and the Colorado section for $100,000.

RAILROADS NOW IN THE HANDS OF RECEIVERS.

	Miles	Outstanding stock	Total funded debt
Apalachicola Northern	102	$3,000,000	$2,000,000
Arkansas, Louisiana & Gulf	61	1,231,100	1,230,000
Arkansas Southeastern	30	500,000	500,000
Atlanta, Birmingham & Atlantic	645	35,000,000	18,533,000
Beaumont, Sour Lake & Western	118	85,000	2,007,251
Birmingham, Columbus & St. Andrews	38	4,500,000	250,000
Boyne City, Gaylord & Alpena	90	501,200	175,000
Buffalo & Susquehanna	91	10,000,000	7,059,000
Cape Girardeau Northern	104	110,000	1,500,000
Chicago & Eastern Illinois	1,282	25,817,800	63,155,000
Chicago, Anamosa & Northern	36	112,000	.....
Chicago, Peoria & St. Louis	245	4,000,000	2,000,000
Cincinnati, Bluffton & Chicago	52	1,125,000	1,500,000
Cincinnati, Hamilton & Dayton	1,015	8,248,575	62,135,640
Colorado Midland	338	10,000,000	9,532,000
Columbus & Southern	23	2,000,000	500,000
Dansville & Mt. Morris	15	50,000	150,000
Denver, Laramie & No. W	56	29,072,800	1,500,000
Fitzgerald, Ocilla & Broxton	23	300,000	150,000
Florida, Alabama & Gulf	25	.....	.....
Florida Central	47	50,000	500,000
Ft. Worth & Rio Grande	235	(See St. L. & S. F.)	
Gould Southwestern	25	51,000	.....
Greenville & Knoxville	23	260,000	460,000
International Great Northern	1,106	4,822,000	24,594,500
Iowa & Omaha Short Line	14	.....	175,000
Kane & Elk	15	75,000	9,000
Kansas City & Memphis	58	852,000	796,000
Kansas Southern & Gulf	10	1,000,000	.....
Liberty White	50	300,000	250,000
Louisiana & Northwestern	121	2,300,000	2,180,000
McCrory & Beedeville Southern	12	.....	.....
Macon & Birmingham	97	500,000	500,000
Marietta, Columbus & Cleveland	49	250,000	250,000
Missouri & North Arkansas	365	8,340,000	8,340,000
Missouri, Oklahoma & Gulf	329	8,261,000	8,261,000
Muscatine North & South	54	1,000,000	890,000
New Berlin & Winfield	8	30,000	33,800
New Orleans, Mobile & Chicago	402	8,075,300	12,699,500
New Orleans, Texas & Mexico	287	(See St. L. & S. F.)	
Ocala Northern	54	.....	.....
Ohio & Kentucky	40	300,000	425,000
Ohio River & Columbus	24	501,000	85,000
Opelousas, Gulf & Northeast	57	1,421,475	1,143,000
Orange & Northwestern	62	(See St. L. & S. F.)	
Pere Marquette	2,322	26,186,590	63,672,000
Pittsburg, Shawmut & Northern	291	15,000,000	14,655,600
Rome & Northern	20	1,000,000	.....
St. Louis & San Francisco	4,747	41,985,762	295,499,358
St. Louis, Brownsville & Mexico	528	(See St. L. & S. F.)	
St. Louis, San Francisco & Texas	242	.....	.....
Salt Lake & Mercur	14	300,000	250,000
San Antonio, Fredericksburg & Northern	...	.....	.....
San Antonio, Uvalde & Gulf	316	230,000	3,663,000
Sharpsville	21	350,000	.....
Tennessee Ry.	54	1,000,000	1,129,000
Tennessee Central	293	7,941,450	12,379,900
Texas Mexican	161	2,500,000	1,380,000
Toledo, St. Louis & Western	450	19,947,600	28,027,000
Trinity & Brazos	303	304,000	8,760,000
Valdosta, Moultrie & Western	42	100,000	300,000
Virginia & Kentucky	5	119,100	35,500
Wabash	2,514	92,801,986	115,156,496
Wabash, Chester & Western	65	1,250,000	690,000
Wabash Pittsburgh Terminal	63	10,000,000	30,236,000
West Side Belt R. R.	22	1,080,000	383,000
Wheeling & Lake Erie	459	36,980,000	15,000,000
Williamsville, Greenville & St. Louis	35	525,000	525,000
Wisconsin & Michigan	123	956,000	3,518,245
Total	21,048	$434,599,738	$830,728,790

SUMMARY OF RECEIVERSHIPS FOR 39 YEARS.

Year.	No. of roads.	Miles.	Bonds. and stocks.
1876	42	6,662	$467,000,000
1877	38	3,637	220,294,000
1878	27	2,320	92,385,000
1879	12	1,102	39,367,000
1880	13	885	140,265,000
1881	5	110	3,742,000
1882	12	912	39,074,000
1883	11	1,990	108,470,000
1884	37	11,038	714,755,000
1885	44	8,836	385,460,000
1886	13	1,799	70,346,000
1887	9	1,046	90,318,000
1888	22	3,270	186,814,000
1889	22	3,803	99,664,000
1890	26	2,963	105,007,000
1891	26	2,159	84,479,000
1892	36	10,508	357,692,000
1893	74	29,340	1,781,046,000
1894	38	7,025	395,791,000
1895	31	4,089	369,075,000
1896	34	5,441	275,597,000
1897	18	1,537	92,909,000
1898	18	2,069	138,701,000
1899	10	1,019	52,285,000
1900	16	1,165	78,234,000
1901	4	73	1,627,000
1902	5	278	5,835,000
1903	9	229	18,823,000
1904	8	744	36,069,000
1905	10	3,593	176,321,000
1906	6	204	55,042,000
1907	7	317	13,585,000
1908	24	8,009	596,359,000
1909	5	859	78,095,000
1910	7	735	51,427,500
1911	5	2,606	210,606,882
1912	13	3,784	182,112,497
1913	17	9,020	477,780,820
1914	22	4,222	199,571,446

SUMMARY OF FORECLOSURE SALES IN 39 YEARS

Year.	No. of roads.	Miles.	Bonds. and stocks.
1876	30	3,840	$217,848,000
1877	54	3,875	198,984,000
1878	48	3,906	311,631,000
1879	65	4,909	243,288,000
1880	31	3,775	263,882,000
1881	29	2,617	137,923,000
1882	16	867	65,426,000
1883	18	1,354	47,100,000
1884	15	710	23,504,000
1885	22	3,156	278,394,000
1886	45	7,687	374,109,000
1887	31	5,478	328,181,000
1888	19	1,596	64,555,000
1889	25	2,930	137,815,000
1890	29	3,825	182,495,000
1891	21	3,223	169,069,000
1892	28	1,922	95,898,000
1893	25	1,613	79,924,000
1894	42	5,643	318,999,000
1895	52	12,831	761,791,000
1896	58	13,730	1,150,377,000
1897	42	6,675	517,680,000
1898	47	6,054	252,910,000
1899	32	4,294	267,534,000
1900	24	3,477	190,374,000
1901	17	1,139	85,808,000
1902	20	693	39,788,000
1903	13	555	15,885,000
1904	13	524	28,266,000
1905	6	679	20,307,000
1906	8	262	10,400,000
1907	6	114	13,777,000
1908	3	138	2,547,000
1909	12	2,629	250,033,000
1910	17	1,100	93,660,109
1911	13	1,386	40,741,453
1912	12	661	25,910,990
1913	6	1,159	86,163,850
1914	9	1,470	83,189,500

receiver's hands in 1909 when a plan of readjustment was put through by which the Baltimore & Ohio took the control of the company and charge of its operation and in return guaranteed some of its securities. The Cincinnati, Hamilton & Dayton before that receivership was overcapitalized and the readjustment was by no means drastic. With the Baltimore & Ohio's credit behind it and with favorable conditions, or even average conditions, it would have probably gotten along all right. The floods of 1913, however, were fatal.

The International & Great Northern is a Gould property, but with better credit than some of the other Gould roads. Arrangements had been made for the refunding of $11,000,000 5 per cent notes for two years and a half. The details, however, of the arrangement had not been carried through when the European war was declared, and the consequence was that the general upset of financial markets made the fulfillment of this plan impossible. A receivership, therefore, followed.

The foreclosure suit and sale in respect to the Chicago, Rock Island & Pacific Railway Company stock which was deposited under the Chicago, Rock Island & Pacific Railroad Company 4 per cent bonds is not, of course, included in our table showing either receiverships or foreclosures, since this table applies only to railroad companies which are operating companies.

The most discouraging feature about the fact that nearly 10 per cent of the total mileage in the United States is in the hands of receivers, is the indifferent attitude with which the public can regard this fact. The receiver must operate the property. The public loses nothing directly. There is no present prospect of any such period of prosperity as followed in the years after 1896. Roads like the Pere Marquette get deeper and deeper into the mire. It is only indirectly that the public is affected and that after some length of time. Then the impairment of railroad credit becomes apparent, and then it is that the public sees how widespread is the harm which railroad bankruptcy on a large scale may entail.

RATE SUSPENSIONS BY THE INTERSTATE COMMERCE COMMISSION

THE *Railway Age Gazette*, in its issue of December 11, published an editorial headed "Absentee Landlordism and the Commission" dealing with the suspensions by the Interstate Commerce Commission of tariffs containing increased freight rates, and criticizing the commission for entrusting too many imporant matters to subordinates.

We have received a letter from an officer of the commission quoting the following extracts from the editorial, and then stating that there is "absolutely not one word of truth in any statement quoted:"

". . . the suspension of unimportant . . . rate advances . . . have been left to be settled wholly by young employees of the Commission. . . . No commissioner personally even knows of the matter, but a law clerk receives a letter from some shipper, whose responsibility he knows nothing of, protesting against the advance. To be on the safe side he suspends the advanced rate . . . and at the expiration of a year or a year and a half it is found that the advanced rate is entirely reasonable. . . . The railroad never had a chance to justify the rate before it was suspended, never even had a hearing. Some commissioner may theoretically have passed on the case, but if he did it was in a purely cursory way. . . . The Interstate Commerce Commission . . . has to leave innumerable important decisions to $1,500-a-year clerks. . . . It is, therefore, a palpable injustice for the commission to permit its clerks automatically to suspend any advanced rates if there seems to be the remotest possibility of a protest from shippers. . . ."

In response to a request for a full statement of the procedure followed in suspending rates the officer of the commission who criticized the foregoing charges, replied, in part, as follows:

"I would advise that during the 11 months which ended on October 31, 1914, 149,031 separate publications, each containing many and various rates, classifications, fares, or charges were filed in this office.

"The number of proceedings instituted on our Investigation and Suspension Docket during this period was 188, and 147 such cases were disposed of. In 27 instances the tariffs under suspension were voluntarily withdrawn by the carriers; in 6 instances the protests were withdrawn and the proceedings subsequently dismissed; in 44 instances the proposed changes were allowed as filed; in 25 instances they were allowed in part; in 42 instances they were disallowed, and in 3 instances proposed reduced rates were afterwards justified by the carriers and the commission's order of suspension was vacated. In one instance the increased rates under suspension were after hearing required to be canceled, but, upon rehearing, were permitted to become effective.

"During this same period the commission declined to suspend tariffs in 205 instances.

"Immediately upon receipt of a complaint, in any form whatsoever, in respect to an increased rate which is contained in a tariff filed with the commission but which has not yet become effective, it goes to our Suspension Board, composed of Messrs. J. M. Jones, chief of our Division of Tariffs; Hugo Oberg, a rate expert; S. H. Smith, also a rate expert, attorney, and chief of our Division of Inquiry; J. H. Fishback, chief of our Division of Correspondence and assistant to the secretary, and the secretary. The complaint and all possible questions arising in consequence of the complaint in connection with the rates complained of are considered carefully by this board, and it prepares a statement of all pertinent facts in respect thereto, which together with the entire file in each case is laid before the commission, and is considered by the commission, and when I say by the commission, I mean by each member of the commission, and each member of the commission votes as to whether or not any rate shall or shall not be suspended. No rate in any tariff has ever been suspended by the commission without a quorum vote by the commissioners.

"Furthermore, when a protest against a proposed increased rate is received by us we transmit to the carrier, filing the tariff containing said proposed increased rate, information respecting the protest, and give the carrier an opportunity to submit such explanation as it may desire to make, as to the reasons for the increased charges or changes in regulations. In instances, after we have transmitted these statements to the protestants, their protests have voluntarily been withdrawn. Whenever the carrier or the complainant requests a hearing prior to the effective date of the proposed change in rate, it is always granted and the representatives of the carriers and of complainants, or either, are given an opportunity to be heard, and any carrier is at liberty at any time to ask the commission for an opportunity to explain orally the reasons why changes, either in rates or regulations, have been proposed."

The *Railway Age Gazette* has at various times criticised the giving of the power to the commission to suspend advances in rates, and it believes that there are some features of the law which should be corrected, but we have never intended to criticize the commission unfairly and we are convinced that the editorial in question did contain erroneous statements and was unjust to the commission. Moreover, as a large number of railroad men and others have an erroneous impression regarding the routine work of the commission in handling suspensions of rates, we are glad to publish the foregoing statement regarding the procedure followed. In this connection it may be worth while to give the salaries paid the members of the suspension board. They were stated to be as follows in the commission's annual report for 1913: Mr. McGinty, $5,000; Mr. Jones, $5,000; Mr. Smith, $3,900; Mr. Fishback, $2,400; Mr. Oberg, $1,740.

While, as the foregoing clearly shows, the statements in the editorial in question did injustice to the commission, it does not by any means follow that criticisms of the exercise of the suspension authority are not justifiable. Regardless of the principles on which the commission has been acting, or the procedure by which it has carried them out, the great objection remains that in the exercise of its discretion it has been suspending a large number of rates after comparatively little complaint, and, in cases where it has found later that the advances are reasonable, it has been depriving the railroads for too long a time of revenue which they have needed and to which they have been entitled.

Chairman Harlan, of the commission, in his dissenting opinion in the rehearing of the 5 per cent case, pointed out that the carriers contended that their necessities were so urgent that they could not await an increase of revenues from the other sources suggested by the commission, and added: "Relief, however, could be had immediately if the commission would refrain from a too free use of its power to suspend increases in rates pending investigation. *This power is exercised, in my judgment, with unnecessary frequency*, in view of the opportunity that shippers have of testing the reasonableness of increased rates upon formal complaint filed with the commission; and, in my judgment, the Congress never intended so free a use of it when the power to suspend was granted to us."

This statement from the chairman of the commission supports the position we have taken that the power of suspension is being abused.

The Railway Situation from Different Viewpoints

Julius Kruttschnitt, Charles A. Prouty, Daniel Willard, William J. Jackson, P. W. Coyle, J. Herndon Smith, A. B. Leach, Norman W. Storer and J. S. Marvin

WHITHER ARE THE RAILWAYS DRIFTING?

By J. Kruttschnitt

Chairman, Executive Committee, Southern Pacific Company

To answer your questions, whither the railways of the United States are drifting, and where they are finally likely to land, we must consider: (1) The present condition of the railroads; (2) what has cast them adrift, and (3) the forces that will determine whether they are to remain in the hands of their owners, or to be irretrievably wrecked and pass to the government.

(1) It cannot be denied that our railroads are in a state of severe stress. Gross revenues have been falling for many months, expenses and taxes have been rising rapidly and uninterruptedly, and under these influences net earnings are vanishing at an alarming rate. The shrinkage of the margin between revenues and expenses has affected railroad credit, and owners of money are unwilling, except on terms commensurate with the risk, to invest it in enterprises whose capital is grudgingly allowed by regulating bodies to earn less than is earned by capital invested in farms, manufactories, banks, and other enterprises. It is not as generally known as it should be, that the railroads are now earning a smaller surplus than they did eight or ten years ago, although in that period one and a half to two billions of dollars have been spent in extensions, equipment, terminals, additional main tracks, and miscellaneous additions and betterments. As the railroads cannot afford to pay higher rates for capital than they can make it earn, they have necessarily had to stop purchasing locomotives and cars, discontinue extensions and improvements, and reduce expenditures for maintenance and operation, to a point where most efficient public service is impaired.

(2) Many causes have contributed to bring the railroads to their present condition. The principal one is the fall in surplus, caused by smaller revenues and greater expenses—the former brought about by regulating bodies, the latter by unreasonable demands of labor and expensive, embarrassing, and obstructive laws, supplemented by orders of forty-nine commissions, whose dicta have the force of law and from which there is no appeal to the courts. As examples, we may cite:

Full crew laws.

Laws limiting the size of freight trains.

Expenses of federal and state valuation.

Expenses of changing methods of accounting, and of keeping two or more sets of accounts.

Next is the increase in taxes. Through methods which have increased railroad taxes much more rapidly than taxes on other property, the general public is discriminating unjustly against that part of the public which has devoted its property to public use. Commissions seem to forget that they are the representatives of *all* of the people, and not of those people only who use the railroads, and that their duty is to deal as justly with the owners as with the users of railroads. Rates are reduced and reparation is granted to railroad users easily and quickly, in marked contrast to the deliberation with which requests for increases in rates are treated, and which, if granted, are never coupled with reparation, no matter how long and unreasonable the delay of investigation may have been. In the five years during which their application for an increase in rates has been under consideration by the Interstate Commerce Commission, the railroads affected have no doubt spent enough money in conducting their case and in supplying unusual and useless information and statistics, to absorb a large fraction of one year's expected gain from the increase.

(3) To public opinion, the supreme force that dominates and controls all classes and political parties in our country, we must look for a solution of the problem of the future of our railroads. It decreed years ago that unjust discrimination by its railroad servants and unfair practices with respect to railroad *users,* should cease; and these evils no longer exist. The same supreme power will, when convinced that the time for action has arrived, decree that unjust discrimination by its legislative and administrative servants, and unfair practices with respect to railroad *owners,* shall cease. Legislatures and commissions will be made to realize that power is delegated to them for the benefit of *all* classes of citizens—owners as well as users of railroads, unorganized as well as organized labor—and evidence is afforded by the utterances of the press and of those occupying high public office, that the spirit of fairness and justice in the American people has been quickened, and public opinion is even now compelling the attention of politicians. The public's attitude toward recent unreasonable demands of organized railroad labor, foreshadows the modification of existing laws governing mediation and arbitration of industrial disputes so as to afford public opinion opportunity to influence the settlement of demands of railroad servants before permitting them to deprive the country of transportation by rail.

The majority of the American people do not desire government ownership of railroads, and will finally substitute constructive for destructive regulation, and will insist that the powers of all public servants be co-ordinated so that all will work for the common good. Unfair discrimination against the railroads will cease, and even-handed justice will be accorded to both railroad owners and users. When the general public understands how it has been misrepresented by unjust and unwise public servants, and how perilously near to ruin they have brought all business interests in our country, in starving and threatening the life of the railroads, they will not long delay the exercise of the necessary corrective power. Indeed, it must be apparent to the most superficial observer even, that public opinion has already been aroused, and its effect has been seen in the recent solution of a long-pending and exceedingly vexatious problem.

WHY THE VALUATION SHOULD NOT BE DISCONTINUED

By Charles A. Prouty

Director of Valuation, Interstate Commerce Commission

You ask me to write you briefly why the valuation of railways now in process by the United States government should not be discontinued.

The Supreme Court of the United States has decided, and it is today universally accepted as a legal principle, that a railroad is entitled under the constitution of the United States to a fair return upon the *fair value* of the property which it is devoting to the public service.

The power of the court—certainly the power of the federal court—can only extend to fixing the limit below which the legislative branch of the government may not go, and in my own opinion a commission may and should establish a rate substantially higher than this court limit. A commission may also consider in the fixing of individual rates circumstances and conditions which could not properly influence the court in passing upon the question of confiscation. But, nevertheless, while the function of the commission differs from that of the court, when the question before legislature or commission is upon the

general level of railroad rates, the fundamental fact still is the *value* of the property devoted to the public service.

It appears, therefore, that whether court or commission is dealing with a general schedule of rates, the all-important inquiry is, What is the *value* of this property? Now, how can court or commission discharge its full duty; how can justice be done between the public which pays and the railroad which exacts, until this question has been answered? Should not the government of the United States, if it is to undertake the regulation of railroad charges, ascertain in the speediest and the most complete manner possible the value of the property which is being devoted to that service?

It may be said with truth that the value of a railroad for rate-making purposes has never yet been clearly defined, but it is also true that courts, commissions and economists are all one in the opinion that for the determination of this question certain facts must be marshalled, of which the principal are, cost of reproduction new, cost of reproduction less depreciation, original investment in the property, and the history of that investment. These facts must be had before value can be determined, and these facts are now being collected by the government.

It is true, as I have myself pointed out, that the value of a railroad cannot be made the basis of its rates in the same way that the value of a gas plant or a water plant or a system of street railways can be, for the railroads of this country stand in competition with one another and their rates cannot be independently established. But while this infirmity goes to the making of a particular rate, it does not apply to railway rates as a whole. In the past the question presented to the federal commission has usually been one of individual rates. Is this rate too high as compared with some other rate or as compared with rates in general? Today our railroads are claiming that railroad property as a whole is receiving too little for the service rendered and that railroad rates as a whole must be advanced.

I have been quoted as saying that the Eastern Rate Advance Case should not be decided until the railroads of this country had been valued. That would have been an absurdity, for the commission must have dealt with that question when it arose upon the best evidence available, but I did say, and I repeat, that questions of that character can never be satisfactorily and finally decided until the railroads of this country have been valued by the government. This application for an advance will by no means be the last, and the commission must find some solid ground on which to stand. The people of this country desire to treat its railroads justly, and they must do so if an efficient service is to be rendered, but they also desire to know, and they are entitled to know, what the actual value of these properties is.

It is suggested that some particular railroad, or the railroads of some particular section, should be valued in order that it may appear whether such a valuation is of service in rate-making. This assumes that it is still an open question whether the value of railroad property is of significance in the making of railroad rates; but the Supreme Court has decided that the value of the property devoted to the public use should be the controlling factor, and has applied that decision in several cases itself.

Our railroads have earnestly urged in recent discussions that their credit was in serious danger. When a private industrial plant desires to establish its credit it employs some competent means of appraising the value of its property and exhibiting that value to the investing public. The investor desires to know the inherent value of the thing in which he invests. What could more strengthen the credit of the railroads of this land than a certificate from the government of the value of their property, especially when the government is legally and in good conscience bound to allow sufficient earnings to justify that valuation?

There is also a business reason why the present valuation should be prosecuted to a speedy completion.

No precedent existed for the doing of this work upon the scale required by the Valuation Act, and the development of the present organization has been necessarily experimental and therefore slow and expensive. That organization has been substantially completed and should be entirely perfected by July 1 next. Beginning January 1, 1915, the present force of the commission should proceed at the rate of from 20,000 to 25,000 miles per annum. The same overhead organization could take care of 50,000 miles per annum. Good business economy would require that the work be developed up to that stage within the next six months and kept there until completed. To adopt any other course, if this work is to be done at all, would involve great pecuniary loss.

EFFECT OF THE RATE ADVANCE DECISION

By Daniel Willard
President of the Baltimore & Ohio

What the decision might be said to indicate or promise for the future is, in my opinion, even more valuable than what it actually gives in the way of immediate increase in rates.

The present report of the commission should be read in conjunction with that given under date of July 29, in order to realize the scope of the decision and its ultimate effects. In that it has extended the territory and the classes of traffic to which the 5 per cent increase may be generally applied, the commission has afforded a further measure of immediate relief; but what I consider of even more importance is its recognition of the needs of the railroads for increased revenues and the reiteration of its former statement as to its duty and purpose to aid, so far as it legally may, in the solution of the problem as to what course the carriers may pursue to meet the situation.

Personally I was disappointed because the commission had not granted the full 5 per cent advance which was asked for, and that coal, coke and ore, which constitute nearly two-thirds of the entire tonnage handled by the Baltimore & Ohio Railroad, were among the articles to which the 5 per cent increase does not apply.

While I feel disappointed and earnestly believe that it would have been better for all concerned if the full increase as requested had been granted, nevertheless I have found much in the decision that is encouraging. The commission in its report finds that "from whatever comparative standpoint used, the net operating revenues of the last fiscal year must be regarded as unduly low; that the operating costs and operating revenues fail to show the tendency to such concomitant variation as should prevail in the transportation industry; and that while the gross revenue declined only 3.4 per cent, the net revenue shrank approximately 17.7 per cent as against the previous fiscal year"; the commission concluding that "the indication is that some important items of cost have become relatively inelastic, and that a fall in gross revenues leaves an increasingly narrow margin of net revenue." This is exactly the contention of the railroads. It is what they foresaw in 1910, and it is what they have been urging that the results of the operation of the years since then have demonstrated.

It is a fact, as the commission says, that a condition has come about whereunder it is absolutely impossible for the railroads to hold their expenses in proper relation to their gross earnings, and this is due to many different influences which have been quietly at work for a number of years. Among such influences may be mentioned, full crew laws, hours of labor laws, higher wages, certain standard minima of service prescribed in some states by public commissions and insisted upon none the less strenuously in other places by the force of public opinion, increased taxes, etc., etc. These influences or conditions, whether in themselves good or bad, have all contributed to bring about the state of affairs so clearly recognized by the commission, and in my opinion fully justify the railroads in their efforts to obtain higher rates.

The commission also says, "We can not view with favor any attempt to obtain an increase in net revenue through unduly restricted expenditures upon maintenance," and it is most en-

couraging that the commission should have spoken as it did concerning that particular matter. It was urged during the hearing in the 5 per cent case by some of those claiming to speak with authority for the public that the railroads were spending too much upon maintenance, and it was also urged that if the railroads would spend less for maintenance, they would be able with existing rates to pay a fair return upon the capital invested. It is clear, however, that the commission was not misled by such arguments.

It is also encouraging to have the clear statement of the commission that "if we are to set rates that will afford reasonable remuneration to these carriers, we must give consideration to the increased hire of capital as well as to other increased costs." This increased cost of capital was one of the contentions urged most strongly by the carriers in support of their request for advanced rates.

The commission in its report of July 29 suggested ten sources of additional revenue for all carriers throughout official classification territory, and now stated in that connection: "It is expected that the constructive work suggested in the original report for the purpose of conserving and augmenting the net revenues of the carriers generally will be carried forward without interruption"—and it is perhaps in that particular paragraph that I find most encouragement in the last decision.

The carriers, while admitting that increased revenue might be gained from the ten suggested sources pointed out by the commission, were convinced that much time would be required in the working out of the various problems presented, and urged that an immediate increase was necessary and should be granted to meet the pressing needs of the present, feeling certain that it would develop as the case proceeded, that the increased revenues from all the sources suggested, including the 5 per cent advance, if granted, would not be too great for the proper needs of the situation, and, speaking in that connection, Chairman Harlan of the commission, uses these words:

> My own view of the record has been and is that the carriers in that territory, considered collectively, are in need of more additional net income than the amount, $50,000,000, which they estimated the proposed 5 per cent increase in rates would yield.

I appreciate the very difficult problem that was presented to the commission in connection with this case, and I am not ignorant of the arguments that have been urged by some against any action by the commission intended to be helpful to the railroads. I realize also the limitations established by law within which the commission must act. It should be encouraging, therefore, to all real friends of the railroads, and by that I mean all who are interested in the proper industrial development of this country, that the commission has been willing to treat the question before it in a broad way, and while not granting all the immediate relief specifically asked for, by the railways, and in the manner requested, it has recognized, unanimously, the necessities of the carriers and had again reiterated its former statement that:

> It is our duty and our purpose to aid, so far as we legally may, in the solution of the problem as to the course that the carriers may pursue to meet the situation.

I am confident that the result of this inquiry will be to bring about a much better understanding of the railroad problem by all concerned or interested in that question. Further, I feel confident that better working relations will be established between the railway managers, the regulatory bodies and the shippers, and I am hopeful that because of such better understanding and relations the railroads, the shippers and the regulating agencies, both state and federal, will be able in the future to work out to a satisfactory conclusion the many serious problems that are certain to occur under our system of private ownership with government control.

I think that upon the whole the ultimate result of Mr. Brandeis' connection with the case will be beneficial to the railways. The commission had unanimously held that the evidence in the record was sufficient to convince it of the necessity for increased net revenues, a view in which Mr. Brandeis evidently concurred. Indeed in his argument in the first case, as well as in his brief, he clearly recognized and frankly admitted the needs of the carriers for increased net revenues. He opposed, however, the proposition to obtain the increased net revenues by a uniform advance of freight rates and suggested other methods and sources through which the proper measures of relief might be obtained. It must be admitted by all that rates clearly unremunerative ought to be advanced, and that services performed without charge should either be discontinued or be properly paid for. Concerning these and many other things I think the majority of railroad managers would be in full accord with Mr. Brandeis. Incidentally, the very searching investigation conducted by the commission into the general subject of railroad practices, did more to disabuse the public mind concerning such matters than anything else that could possibly have happened. Undoubtedly, abuses have existed in connection with railroad management as has been the case in all other lines of human endeavor, but the commission's report would indicate that the most searching investigation failed to develop that any serious abuses exist at the present time which could have any material influence upon the condition of the carriers involved in this hearing, and the result of the inquiry should not only be gratifying to holders of railroad securities, but it is also a tribute to the efficiency and character of present railway management.

I have no definite information, but judging from estimates that have been prepared at various times, and assuming the full co-operation of all state bodies is had in applying the increase to intrastate traffic as well as interstate, I believe that the Baltimore & Ohio will realize as much as $2,000,000 per annum, or approximately one-half of what a 5 per cent increase on freight rates on all traffic would have amounted to on the basis of the freight earnings in the fiscal year 1913.

REGULATION OF RAILWAY OPERATION

By W. J. JACKSON

Chairman of the Special Committee on Relations of Railway Operation to Legislation

In response to your request I am glad to make a brief statement of my personal views as Chairman of the Special Committee on Relations of Railway Operation to Legislation. These have been gradually formed through three years of study of the problems confronting us, and are necessarily subject to such modification as future developments may require.

The minutiæ of railway operation are so numerous, and are so interrelated that it is unreasonable to expect that a correct understanding of the questions involved in legislation on the subject can be reached by those responsible therefor, without the assistance only to be obtained from those who have the necessary knowledge.

With some exceptions almost all bills relating to railway operation are drawn by those who have no practical acquaintance with the subject. Bills which are intended to remedy conditions of one kind, do not actually reach those conditions, but affect another set which it was not intended to cover. Or, if they do reach the intended conditions, they also have a bearing on other matters equally outside the purposes of their authors. Bills which apparently involve little or nothing, may commit the roads to expenditures of such amounts as to be wholly prohibitory and beyond the bounds of reason.

In all propositions involving legislation on operating matters, five questions, therefore, inevitably present themselves.

1. What is the precise purpose?
2. Will the suggested form of legislation accomplish that purpose?
3. What is the real necessity for it?
4. What will it cost?
5. Is the object worth the cost?

The primary function of this committee, then, is to provide legislators with correct replies to these questions, and this is

best accomplished by producing before them men who have accurate knowledge of the particular subjects involved.

In most instances it has been found that when these correct answers have been furnished, the vast majority of the proposed bills are dropped by their advocates.

The measures which are not eliminated by this procedure fall into three classes.

1. Those designed to promote practices which are desirable from every point of view.
2. Those designed to promote uniformity.
3. Those promoted by special interests.

In regard to the first class, we have conceived it to be the function of this committee to assist in the formulation of such legislation, with a view to having it practical, enforceable and beneficial, and after its enactment, to contribute to its successful administration by promoting a uniform understanding on the part of all concerned, and by securing the general co-operation of the roads in its intelligent enforcement.

As to the second class, uniformity inevitably means change. Unless the object sought is of such importance as to justify the danger which often is caused by changes in operating methods, the committee has not deemed it necessary to go so far in its co-operation. Should a real necessity exist, however, the same course would be pursued as in the case of the first class.

The third class, of course, presents the most serious problem. The special interests pushing different items of legislation range from an obscure patentee on the one hand to a combination of labor organizations on the other, with all possible combinations of interests between the two named.

This committee has, however, never felt justified in departing from the fundamental principle adopted at the inception of its work, and has in all cases simply endeavored to see that the exact facts surrounding each bill were placed in the possession of those who must be responsible for the legislation.

That this course has been the correct one has been proven by the results.

FROM A WESTERN INVESTMENT BANKER'S POINT OF VIEW

By J. Herndon Smith
Smith, Moore & Company, St. Louis, Mo.

For some time it has been apparent that investors prefer many other kinds of investments to railroad securities. In fact, for the past two years it has been almost impossible to sell railroad securities of any kind in this western country. Even receiver certificates—issued at the expense of all other securities—at a very high rate of interest, have failed to "tempt" capital.

Being in the investment banking business I have naturally tried to find out *why* these conditions exist.

From canvass of many of our large investors, the reason appears to be due to loss of confidence—resulting mostly from the inability of railroads to show a satisfactory statement of earnings, on account of increase in cost of operation and decrease in rates, and the inability of railroads to obtain permission from the Interstate Commerce Commission to advance rates sufficiently to show the margin of safety that formerly existed. Another reason which has been apparent, is the exposures of financing of certain large systems, which has proved disastrous to these companies.

Consequently there is a very decided preference on the part of investors for municipals, public utility and industrial bonds as against railroad securities. As an example of this: One of my customers who handles trust estates, mostly for widows and orphans, which aggregate over $200,000,000, of which $60,000,000 is in railroad bonds, has not bought a railroad security during the past two years; and they tell me they will not put a cent into railroad securities until the railroads are allowed to increase their rates not only to a substantial amount over fixed charges, but enough to enable them to pay off each year some part of their indebtedness, either by sinking fund or serial bond.

To my mind, one of the worst features of railroad financing in the past has been that there has been no provision made in advance for paying off indebtedness at or before maturity. I believe that if railroad bonds are issued on a serial plan, or with a large sinking fund, which would practically retire the issue at maturity, it will go a long way towards helping to restore confidence on the part of investors.

The Interstate Commerce Commission has granted the application of the eastern railroads to increase their rates in part, but I think it will be some time before this will very materially help the earnings of the eastern roads.

The roads west of the Mississippi have not received any increase as yet, and they are also hampered by the attitude of the state commissions in different western states. Railroad credit has been so much impaired in the past few years that it is going to take much larger earnings to restore the confidence on the part of investors than it would have if the increase in rates had been granted some time ago.

FROM A NEW YORK INVESTMENT BANKER'S POINT OF VIEW

By A. B. Leach
President Investment Bankers' Association

In the confusion of tongues, all noisy with the railroad rate problem, the piling up of statistics and figures by the technical journals dealing with this most important subject, it has often seemed to me that perhaps our people were losing sight of what, to my mind, is one of the cardinal points in this controversy.

The railroad problem, with which this country is grappling, is not a new one. It has been before the public constantly. This should not surprise us. The developments of the railroads are so essentially linked up with the development of the country at large that it is small wonder that upon the railroads should be focused at all times a great deal of attention.

We all remember very well the first stage of railroad building in this country. If we follow this history it can easily be seen how the present situation constitutes a distinct and logical phase in the development. Great was the need in the middle of the nineteenth century for railroad communication; insistent was the demand for transcontinental lines, feeder lines and well constructed terminals, in order that this country could be given the development to which it was so fully entitled. It was realized that a railroad once constructed, as by magic touch, turned enormous areas of little use theretofore to the community at large, suddenly into busy agencies for local upbuilding and business development of the country in general. It can therefore easily be understood, how from all sides aid not only was promised but also literally given to the pioneer railway builders of this country, in the way of land grants and substantial subsidies, in some cases, lower rates for taxation, high returns in freight and passenger charges, liberal rights of way, while cities and villages competed with each other for the location of the lines. It was realized that funds invested in railways would not only be of great benefit to the communities served and to the new states which they were upbuilding, but that it would also benefit the country as a whole. It was expected that these inducements would be of great ultimate profit to those who were courageous enough to invest their money in what was at that time considered an extra hazardous investment.

History tells us that a very large percentage of all these enterprises became bankrupt, not because the enterprise or the motives in building the property were not intrinsically sound, but merely because the business did not develop fast enough to carry the interest and other fixed charges necessary for the completion of the property. As one authority puts it: "So rudimentary was the industry of the country and so small its rates of increase that the best located lines, instead of creating as they do now, an annual traffic much ex-

ceeding their cost, were a heavy charge upon the bondholders and stockholders."

The first stage of railway building in this country was one of misfortune, one that in a great many cases brought very heavy losses to the investment world. Nevertheless, the fact stands out clearly, that these railways, no matter what their financial vicissitudes might have been, were the greatest upbuilders of the country. They were monuments of enterprise, bearing testimony to American courage, pluck and perseverance, that made possible the growth and development of the very states and cities which now are among the loudest in their outcry against the railroads.

A second stage in railway history was then ushered in. Upon the debris of the old properties new companies were built up. The construction that took place in the first period had given a tremendous impetus to the productivity of the country and led to greater diversification of production. Consequently, there was a large demand for more railroad communication. While in 1840, the ratio of mileage of railroads to population was one mile of road to every 7,415 inhabitants, and in 1850, it was one mile to every 2,398; in 1860, this ratio had declined to one mile for every 1,027 inhabitants; in 1870, to one mile for every 729, and in 1880, to one mile for only every 538 inhabitants. Between 1855 and 1865, the mileage of railroads in this country was doubled, notwithstanding a panic (the one of 1857) and that our Civil War intervened. This increase in railroad mileage continued unabated. Existing railroads grew prosperous.

What happened before in history then happened again. Managers in charge of these prosperous properties—we say advisedly, managers, because not in all cases were they real owners, the ownership being vested in stock and bondholders scattered all over the globe—became arrogant. They imagined themselves to be the owners of the road instead of the servants of the stock and bondholders and of the public. Their attitude toward the public became unreasonable; their financing became extravagant, not to use a stronger term; in a word, the railway managers felt that they were above the public. "The public be damned," was the motto.

As action inevitably produces reaction, the answer to this arrogance and unreasonable attitude of the railway managers was increased legislation. First, by the several states, then, by the Federal government. We got a large number of state railway commissions, and alongside of them the Interstate Commerce Commission was called into existence. The powers of the latter were continually increased, and at the present time in the hands of this commission rests such a stupendous authority in matters relating to the prosperity or adversity of millions of people as no official body of men has ever possessed.

With the event of this increase and regulation, the pendulum swung too much into the other direction and little regard was meanwhile given to the complete change in attitude on the part of the railway managers. A new school of railway managers who were not first and foremost financiers, or possibly Wall Street speculators, took a hold of the properties. Many of these operators had started railway operation at the very lowest round of the ladder, and their present position is a fine tribute to the highest ideals of American democracy. This school of railway managers substituted for the above-quoted motto another one, more in harmony with a broad vision. "The public be pleased" was their motto, and in that spirit of public policy, railway operation is at present conducted in this country.

However, the public mind, with preconceived notions, in many cases handed down from past generations, has been framed in such a manner that I feel that the railways today are not receiving that just and reasonable treatment which I believe we, as Americans, are always ready to accord to every one.

Three things stand out in the present situation.

First—We have reached a period of *overregulation*, as a result of which investment of new money in railway properties today is at its minimum. Unless a sudden and radical change is brought about, this overregulation will lead the railways into bankruptcy. History points out that all conditions are more or less transient and that nothing has really come to stay. Personally, I believe that the American people are too sensible not to be willing that the railways shall be run in such a way and shall charge such a price for the service that real money invested in railway property will become profitable and pay a satisfactory and constant rate of return. Those who are intently watching the trend of public sentiment have seen that this desire of the American people for fair play is again manifesting itself in many ways, and consequently a change in overregulation of our railroads and at least in the obstructions put in their way for earning a reasonable return on the investment, may be expected.

Second—Commerce, without transportation, is impossible. No community has ever prospered without adequate transportation enabling it to bring its products with great despatch to the distant places where they were needed, and at the same time giving it the facilities for having brought to its door, without delay, all it needs. Therefore, every community served by a railroad is directly interested in the welfare of that railroad. It is imperative for the growth of any community that the company serving it with transportation should be solvent; that its business should be profitable and that it will be in a position to give to that community the very best service in every respect. In order to do this, the railway company should have excellent facilities in rolling stock, roadbed, stations and other physical characteristics, and none of these can be had if the railroad in question is constantly harassed by federal and local authorities hampering it in its endeavor to earn a reasonable return on its investment, in order to establish thereby the credit so essentially necessary for keeping its physical as well as its financial position in first-class condition. I don't think I am over optimistic when I state that our communities are becoming more and more conscious of this necessity and this has much good in store for the future.

Third—The American people have never been nor ever will be a nation desirous of cheapness only, in any product. They want the best that there is. Even under present conditions, American railway service is still, in many respects, unmatched and the best of any in the world. Private initiative has established in this country a record of attainment that can stand comparison with any of the government owned railway systems of Europe. It certainly would be one of the greatest misfortunes that could happen to this country, both for the sake of the railways and the people, if government ownership would be inaugurated, and I am sure, if I judge recent development aright, that whatever inclinations there might have been of going into the direction of government ownership, a second and saner thought on the subject is now manifesting itself.

For the reasons outlined above, I believe that a change is due, that better, fairer and more reasonable treatment of the railways is to be had.

I have the highest respect for the Interstate Commerce Commission, not only as a most desirable regulative body, far to be preferred above the conflicting authorities of state commissions and state legislators, but also in regard to its personnel. I believe most confidently in the good faith and the integrity of these gentlemen. But does it not appear that they have been burdened with an impossible task, and that too great an authority has been placed on their shoulders?

All things point to the fact that a cure of the railway rate situation lies in the stopping of further legislation. Let the railroads run their own properties. Let not the authority to run the business be snatched away from the railroad's operators and be exercised by those who have no responsibility, whatsoever, to the owners of the properties. Let us not be misunderstood. We do not want to go back to the chaotic conditions of the seventies and thereabouts. We wish to see established, how-

ever, a condition of affairs whereby the railroads run their own properties, of course, under legislative authority, assuring equal treatment to every shipper, big and little, but the railroads in turn insisting:

First—That in the way of charges, a fair value shall be paid for every dollar of obligation issued;

Second—That the railways shall be relieved, as far as passenger traffic is concerned, of local legislative restrictions.

The railways are the largest business interests in this country, they control more trade in the way of purchasing power, and are more nearly alive to the success of their business, than any other enterprise.

If our railways are not properly managed, prosperity in this country is impossible. If they are to be constantly restricted by unreasonable legislation, if they continue to remain a most popular thankful and remunerative object for baiting on the part of politicians, big and small, then so long will general prosperity not come to this country. Luckily, we enter the new year with hopeful signs, indicating that an ever increasing number of our citizens is getting nearer to a full and unbiased realization of the real facts, and to a better understanding of the true merits of the cause of the railroads.

PROGRESS IN RAILWAY ELECTRIFICATION IN 1914

By N. W. Storer
General Engineer, Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa.

All those who are interested in the electrification of steam railways have every reason to feel encouraged at the progress that was made during the past year. While no great electrification projects have been completed, the developments have been continuous and of far-reaching importance.

MERCURY ARC RECTIFIER

Probably the most important advance that has been made during the year is that in the development of the mercury arc rectifier in its adaptation to heavy railway service. This, of course, is not a new development, nor was it applied commercially during the year except in a very limited way, but the progress has been great and the results that have been achieved in its operation—both on the locomotive supplied with power from a single phase line and in substation use—have been such as to give the greatest encouragement to the belief that in a very short time the rectifier will be a thoroughly commercial article. The rectifier can be used with either the d. c. or the single-phase a. c. system. In the d. c. system its place will be in the substation in place of the synchronous converters and motor generator sets which are now used to transform from alternating to direct current. Here its high efficiency under all conditions of load and its adaptation to any commercial frequency make it certain that if it proves to be a satisfactory piece of apparatus, it will be used very largely for substation work where direct current is applied to the trolley.

On the other hand, its successful performance on the Pennsylvania combination car which was fitted up as a 1,000-h.p. locomotive, and which has been in operation on the New Haven system for the past nine months, shows that it is equally applicable to such service. With this apparatus any direct current locomotive can be adapted for operation from a single phase trolley by the addition of a transformer, rectifier, and a few additional pieces of control; thus, all of the advantages of transmission at high voltage alternating current will be enjoyed and all of the advantages of the direct current motor will be secured, together with the flexibility in speed control which results from changing the voltage applied to the motor. The Pennsylvania car referred to is one of the standard suburban steel combination cars and is equipped with four 250-h.p. d. c. motors. It has the transformer, rectifier and control equipment located in the baggage compartment and is really a locomotive of 1,000-h.p. capacity. A single rectifier furnishes all of the current required by these four motors. The efficiency of the rectifier will vary from 95 to 98 per cent, depending on the voltage which it supplies. For voltages of 1,200 or over, the efficiency will be above 97 per cent at all loads.

THE D. C. SYSTEM

New records have been made during the past year in direct current railway electrification. The Butte, Anaconda & Pacific, which is operating at 2,400 volts d. c., reports most satisfactory results. Direct current at 2,400 volts is also being applied to the third rail on another line, and the Chicago, Milwaukee & St. Paul has given a contract for the equipment of a subdivision of its line with 3,000 volts d. c., but of even greater importance are the tests which have been made at East Pittsburgh with still higher voltages. The great drawback to the use of high voltage direct current has been the difficulty of building high voltage motors for car equipments. This difficulty seems to have been largely overcome since an equipment consisting of two 100-h.p. motors has been operated successfully on a car at East Pittsburgh from an overhead trolley with voltages from 5,000 to 7,000 d. c. The tests were remarkably successful, both as regards motors and control, and the further development of this apparatus will be watched with interest. The apparatus has thus far been tested only in an experimental way; it is, however, shortly to be placed in actual service on a branch line of a large system where it can be given a thorough test. If it is found that direct current at a voltage of 5,000 can be utilized commercially for railway purposes without increasing the cost of equipment or of maintenance to an undue amount, there is no question but that such an equipment, together with the mercury arc rectifier for substation use, will have a large field.

THE SINGLE PHASE SYSTEM

The single phase system has made notable progress during the past year. The New York, Westchester & Boston Railway, handling a heavy suburban service out of New York, the Spokane & Inland Empire, and the Chicago, Lake Shore & South Bend, are all operating with the series compensated motor. At this time, however, there are three alternatives that may be presented to the railroad adopting single phase current for its trolley:

First, it may use the commutator type motor. Many improvements have been made in this form of motor which will tend to increase its reliability and decrease the cost of maintenance. This is the motor which the Pennsylvania has adopted for its suburban electrification at Philadelphia.

Second, it may select the split phase locomotive. This is the type that has been adopted by the Norfolk & Western for the electrification of its Elkhorn grade. This system employs a phase converter which is a rotating piece of apparatus located in the cab of the locomotive, which serves the triple purpose of supplying polyphase current for the induction motors which are used to drive the locomotive, and also drives the ventilating fan and the air compressor. It is generally recognized that the induction motor has many admirable characteristics, chief among which are light weight and rigid design, high efficiency, and ability to automatically regenerate power on descending grades. This type of motor makes it possible to secure an output from a locomotive with a given number of drive wheels, which would be practically out of the question with the commutator type of single-phase motor on account of its larger dimensions. The use of this type of motor in heavy freight service on mountain grades is especially desirable on account of the automatic regenerative characteristics which enable a train to be operated down grade at a constant speed without the use of brakes.

The third alternative is the rectifier locomotive which, as previously explained, uses d. c. motors with rectifiers and single phase transformers.

These three alternatives make the single phase system attractive for heavy electrification for long lines where the high voltage of transmission is of paramount importance. The

high voltage direct current system has also shown its ability to handle practically any traffic. With satisfactory operation promised for the various systems, the selection will depend upon the local conditions surrounding each proposition.

HOW RAILWAY EARNINGS SHOULD BE INCREASED; A SHIPPER'S VIEW

By P. W. COYLE
Traffic Commissioner, Business Men's League of St. Louis

That commercial conditions are out of joint there seems to be no question. The real cause of this condition is difficult to determine and the remedy that should be applied to give relief to the carriers, which will enable them to obtain desirable net results, is indeed a perplexing problem.

It would seem, however, that in order to give fair consideration to the subject we should take a retrospective view and examine some of the fundamental features involved. Primarily, of course, the legitimate purpose of the railroads is to furnish adequate transportation to the shipping and traveling public on as economic and equitable a basis as possible. When the means to this end are misused, or perverted, commerce must suffer to the degree that it is thus intimately associated.

In the construction and management of railroads, as in that of other business enterprises, the desire for personal gain and the consequent sharp competition have dominated the management of these properties until, in many cases, the interests of the public have been overlooked or made secondary to these dominating influences.

Up to a few years ago these carriers gave scant recognition to their obligations as public utilities. It is also unfortunate, but, nevertheless, true, that the desire for personal gain so dominated the management of many railroads in the early days that there is left, as a result, a trail of perversion of railroad property to individual use, running through the financial history of certain railroads almost, if not quite, transcontinental in extent. This perversion of railroad property is the foundation of large fortunes invested in other properties, in some instances so closely allied to the railroads as to sap the vitals of the latter, and it is significant that most of the railroads expressing the greatest degree of suffering, in consequence of their impoverished condition, are those through whose financial history runs this trail of perversion.

Of course, we cannot go back and repair all of this damage. It should be kept in mind, however, sufficiently to enable us to view the entire situation calmly and deliberately, because it cannot be said of the railroads of this country as a whole, that they are in the impoverished condition of the roads indicated.

I am, therefore, greatly in doubt as to whether a general advance in the rates is the sole contribution which should be made to bring about satisfactory net results.

Obviously, the dominating influence in railroad management today seeks to serve the public along legitimate lines and conserve the interests of the users and the owners of the properties, subject to reasonable governmental regulation.

In any event, we must recognize the fact that all railroads are intimately woven into the commercial fabric of the country, and we should not, therefore, jeopardize the entire business structure by singling out these roads whose systems have been impaired until they are, figuratively speaking, the weak threads, and require all to atone for their transgressions; nor should we allow their dire necessities to unduly influence our actions in attempting to prescribe a general remedy.

The question comes to my mind frequently: Is the public demanding too much of the carriers in the way of service, both freight and passenger? or rather, have not the carriers given to the public from time to time more service than was really demanded, simply to attract traffic or divert it to individual lines without particular regard to commercial conditions, or the necessity of the public? It, therefore, appeals to me that there is much room for economy in this respect, especially in passenger service, without injury to communities or individual interests.

Since rates are practically fixed by commission, apparently an unnecessary amount of money is expended by the carriers in soliciting business, both freight and passenger, which expense in the last analysis, of course, is borne by the shipper and the passenger. However, I can readily see where the capital invested in railroads must be consistently protected in this respect, so long as there is any element of competition between the carriers. Hence, great economy regarding this feature or others which might be suggested, could not reasonably be expected unless the railroads were permitted to, in some manner, pool their interests, subject, of course, to national supervision.

It would seem, too, that better results might be obtained both for the public and the carriers, if the latter were given a little more latitude in the management of their properties and the conduct of their business in general, subject only to national regulation.

From my viewpoint the greatest need of regulation, at the moment, is that which will enable or compel the carriers to so adjust their rates and regulate their service as to eliminate discriminations between communities, which in certain cases might be done by advancing rates or curtailing service without material injury to the public.

To this end I believe it would be mutually beneficial to the carriers and the public if the right to suspend rates were so modified as to give greater initiative to the career, and the jurisdiction of the Interstate Commerce Commission be so extended, or the co-ordination of that body and the state commissions made so complete, as to make it impossible for the action of the latter to in any wise nullify or affect the action of the former.

SHIPPER ADVOCATES CAR POOLING

By J. S. MARVIN
General Traffic Manager, National Automobile Chamber of Commerce

A number of suggestions have been made for increasing the net revenue of the carriers, and many of them have opened discussion which is interesting and which will probably prove valuable, but I will devote the time and space allotted to me for a shipper's point of view to one subject on which all interests are fairly in accord and which it seems to me should have particular prominence at this time. Extensive results appear possible through a change in the American Railway Association's rules governing the interchange of its members' cars, or at least through the removing of a large proportion of such cars from the application of these rules.

The principle underlying car service rules from the beginning has been that each road is entitled to have its cars returned to the home rails when made empty on another road. While this appears as a natural statement of property rights, it is of very doubtful application under our present extensive railroad systems or in considering the best interests of the carriers, individually or collectively, and of the shipping public, which is entitled to have the several roads so organize themselves and their methods in certain respects as to constitute in effect one great system for the handling of the country's commerce. To illustrate: A freight car owned by the A. B. C. railroad is loaded today at a point on that road to a destination west of its own rails on the D. E. F. railroad. It is placed at destination on consignee's sidetrack, perhaps some distance from the breaking-up yard. The consignee unloads this car in the morning and the same day desires to load a carload of freight to a point still farther west, but the car service rules do not permit him to use this identical car, which must be returned, loaded or empty, to the home road. The railroad on which he is located is therefore required to take this car from his siding back to the yards and switch another car from the yards, or possibly from some other point on its line, into the factory for the outgoing load, notwithstanding

the fact that both cars are practically identical in size and carrying capacity. The cost of tracing and car accounting, telegraph service in the handling of equipment, empty car hauling, switching expenses, congestion of the yards and shippers' sidings, involved in the carrying out of these rules, is incalculable and must be tremendous when it is considered that these rules govern the handling of the more than two million freight cars now in service on our railroads. While the D. E. F. railroad is performing this service for one of its shippers, the A. B. C. railroad is doing the same where a D. E. F. car is on a factory siding empty and could be loaded east except for the rule. Similar conditions prevail in public freight yards.

The fact is that these rules, if enforced absolutely during periods of heavy traffic and car shortage, would cause interruption and delays in the handling of freight that would result in enormous losses to shippers. At such times the circumstances compel the railroads to ignore the rule to a very large extent, and we have the spectacle of railroads being forced to abandon an operating rule that they may handle commerce when it is at its height. In other words, instead of facilitating traffic the rule is impracticable and works contrary to the best interests of the carriers and the shippers as a whole when business is heavy, while on the other hand, when business is light and the carriers would like to reduce their operating expenses the rule is more closely complied with, particularly on account of the per diem system of charges under which each road tries to keep foreign equipment off of its rails as much as possible. Therefore, in periods of slack business we have the railroads undertaking a sort of solitaire on a great scale with freight cars as the cards, and thousands and thousands of these empty cars are hauled to get them onto the home rails, and we all know that there is no greater item of dead loss to the railroads than the hauling of empty cars.

Is this avoidable? Probably not entirely, but to a very great extent, yes, and in saying this I am not expressing an individual opinion that is contrary to the views held by operating officials. It is not a new suggestion. For years railroad operating officials of high standing have expressed themselves openly, and committees of railroad experts in this branch of the service have done the same, to the effect that the present rules should be changed, and succeeded in great part at least by a pooling arrangement that would obviate the stated difficulties and expense. Shipping interests are in favor of it. The National Industrial Traffic League has been urging the railroads for more than a year to take a definite step towards the change, realizing the greatly simplified service that would result where, instead of one car on a shipper's siding as used in the illustration quoted, they are more likely there in multiples of ten. This means that shippers must state in advance to the carrier serving them what shipments they have to move, the destinations and the routes, and the carrier then undertakes to furnish them cars that will answer the purpose according to the present rules which restrict cars to certain directions and routes, notwithstanding the fact that the shipper probably has on his siding all or most of the cars necessary, but of other ownership. And it is a daily occurrence for a shipper to be denied immediate service when empty cars are available, because the carrier will not permit him to load those particular cars in the direction the shipments must go, and he must wait until they can get other cars, although of identical size and carrying capacity. Should the suggested spotting charges be permitted a further injustice would be done the shipper in not permitting him to load the car already spotted. Such delays frequently mean a direct financial loss to the shipper through his inability to get bills of lading for goods ready to ship. It is also apparent that this condition enters very largely into the periodical so-called car shortages.

It is not contended that all cars could be pooled at once. Some roads have better cars than others; they are of greater carrying capacity; and there are a great many cars especially adapted to the particular traffic originating on the roads which built them; the financial obligations assumed by carriers in some cases for equipment must be properly protected. But these are details which could be worked out in view of the tremendous benefits to accrue, and considering the long time which this plan has been discussed and the endorsement it has had from experts it would seem that in this branch of railroad operation the shipping public is entitled to have the railroads make a definite start towards its accomplishment. It is true that a standard for box cars is now under consideration, whereby, hereafter, such cars would be built more nearly alike in dimensions, capacity and mechanical details. But the results of this proposal are at best a long way in the future and I see no reason why it should precede a start on the pooling proposition. There are thousands of cars now in service that are practically alike and a freer use of this large group would relieve the situation and make the application of the home and home rule more possible of enforcement on cars which really require it. And it must be borne in mind that owning roads today, even if they consider their cars better than others, have them returned in great part only when other roads have no use for them. The per diem charge for the use of box cars is the same regardless of their construction and capacity, and whatever plan adopted could properly recognize the roads which have furnished their full quota of equipment and reversely those that fail to do so.

At the recent meeting of the National Association of Railway Commissioners the Committee on Railway Service and Railway Accommodations stated in its report, "we are still impressed that too much time is lost in handling foreign equipment by empty movements or holding cars in order to load in the direction of home." The Interstate Commerce Commission has stated that the present rental and rules are sometimes not equal to the necessities of the situation and do not fully comply with the duties imposed by the act to regulate commerce, which requires reasonable regulation with respect to the interchange of cars so that through routes may be kept open. The commission characterized the stealing of equipment by one road from another as "loose and archaic methods of a disorganized industrial system" and "not the expression of civilization which leads to order, system and certainty" (22 I. C. C., 39). The American Railway Association has a commission of its own members to supervise the observance of car service rules, and this commission has stated that the sudden enforcement of drastic measures tending to return box cars to owners without regard to the traffic offered would result in a decrease in the loaded mileage of box cars that would result in new and greater shortages at all points in the country; it stated that while special equipment and open cars could probably be effectively regulated by the present rule, box cars cannot, because the practice of the home route for such cars is an economic waste. Therefore we have commissions, the shipping public and railroad officials in favor of a change. There has been any amount of discussion and recommendation on the subject, but "what's everybody's business is nobody's business." Such matters are usually of broad import and cover the entire field of certain industry. They become association business. By all means let the American Railway Association right now give one of its experts the particular and only task of formulating an up-to-date plan for free interchange of the thousands of box cars which are practically alike. The carriers' demands for increased rates have led to counter demands that all possible economies be effected. With cars now in plentiful supply and largely on home rails, and with traffic light, the situation is well in hand for the move. The time is opportune.

NEW RAILWAY IN COREA.—The Seoul-Gensan Railway was formally opened on September 6. Its construction was begun during the late war, but suspended until October, 1910, since which time the work has been carried on with vigor. The railway crosses the peninsula from east to west and is 141 miles in length.

Cars and Locomotives Ordered and Built in 1914

Equipment Market Was Poor, Particularly During Latter Half of Year. Grounds for Optimism Now, However

In 1914 railways and other purchasers of cars and locomotives in the United States, Canada and Mexico placed orders for 80,264 freight cars, 2,002 passenger cars and 1,265 locomotives. In the same period there were built in the plants of the various car and locomotive companies and the several railroad shops 104,541 freight cars, 3,691 passenger cars and 2,235 locomotives. These totals as a whole rank with the lowest yet experienced since the compilations of these figures were begun. It will surprise many to learn, however, that even with the war in Europe, the general business depression in America and the financial difficulties of the railways, the returns for the past year are much better than those for 1908 and that, in particular, the orders for freight cars were from 25 to 33 per cent and the orders for passenger cars approximately 50 per cent greater than in 1908.

FREIGHT AND PASSENGER CARS BUILT EACH YEAR SINCE 1899.

Year.	Freight.	Passenger.	Total.
1899	119,886	1,305	121,191
1900	115,631	1,636	117,267
1901	136,950	2,055	139,005
1902	162,599	1,948	164,547
1903	153,195	2,007	155,202
1904	60,806	2,144	62,950
1905*	165,155	2,551	168,006
1906*	240,503	3,167	243,670
1907*	284,188	5,457	289,645
1908*	76,555	1,716	78,271
1909*	93,570	2,849	96,419
1910*	180,945	4,412	185,357
1911*	72,161	4,246	76,407
1912†	152,429	3,060	155,489
1913†	207,684	3,296	210,980
1914†	104,541	3,691	108,232

*Includes Canadian output.
†Includes Canadian output and equipment built in railroad shops.

The tables in the following pages contain detailed statements of the new freight cars, passenger cars and locomotives ordered by the railroads, private car lines and industrial companies of the United States, Canada and Mexico. Although the compilation of figures from such numerous sources is subject to some slight omissions however great the care taken, the results are sufficiently accurate to meet the general purpose for which these statistics are prepared, namely, to show the character and extent of the purchases of rolling stock in 1914 as compared with previous years.

CARS AND LOCOMOTIVES ORDERED DURING PAST 13 YEARS.

Year.	Locomotives.	Cars—Passenger.	Cars—Freight.	Year.	Locomotives.	Cars—Passenger.	Cars—Freight.
1901	4,340	2,879	193,439	1908	1,182	1,319	62,669
1902	4,665	3,459	195,248	1909	3,350	4,514	189,360
1903	3,283	2,310	108,936	1910	3,787	3,881	141,204
1904	2,538	2,213	136,561	1911	2,850	2,623	133,117
1905	6,265	3,289	341,315	1912	4,515	3,642	234,758
1906	5,642	3,402	310,315	1913	3,467	3,179	146,732
1907	3,482	1,791	151,711	1914	1,265	2,002	80,264

The data given herewith are compiled from official sources. The *Railway Age Gazette*, in answer to its inquiries this year, received communications either stating that no cars or locomotives were ordered in 1914 or containing the details of orders, if such were placed, from all but three of those railroads in the United States, Canada or Mexico owning over 500 freight cars. It also received similar information from the greater part of the remaining smaller roads and from a majority of the private car lines. In those cases in which no replies were received the data were taken from the weekly records of the paper or from the reports of the builders.

These weekly records show that the orders for cars and locomotives held up exceedingly well during the first six months of the year, but that during the latter six months the number of orders placed was almost nil. It would be hard to find a clearer indication of the effect on the railways or on the railway supply companies of the war and the adverse rate decision, since superseded.

LOCOMOTIVES BUILT FOR EVERY YEAR SINCE 1893.

Year.	No. Built.	Year.	No. Built.	Year.	No. Built.
1893	2,011	1901	3,384	1908*	2,342
1894	695	1902	4,070	1909*	2,887
1895	1,101	1903	5,152	1910*	4,755
1896	1,175	1904	3,441	1911*	3,530
1897	1,251	1905*	5,491	1912†	4,915
1898	1,875	1906*	6,952	1913†	5,332
1899	2,475	1907*	7,362	1914†	2,235
1900	3,153				

*Includes Canadian output.
†Includes Canadian output and equipment built in railroad shops.

The total of freight cars ordered in 1914, 80,264, compares with a total for 1913 of 146,732. Of the 1914 total over 90 per cent were specified as having all-steel or steel underframes, and approximately 60 per cent as having friction draft gear. Another indication, also, of the tendencies in freight car construction is the total of 2,693 all-steel box cars. A surprising feature of slightly different nature is the fact that the orders for hopper cars in 1914 were less than 25 per cent of the number ordered in 1913.

CLASSIFICATION OF LOCOMOTIVES ORDERED DURING THE PAST FOUR YEARS

	1914	1913	1912	1911
Mikado	333	796	1,309	590
Switching	201	638	821	443
Consolidation	166	823	858	577
Pacific	174	566	594	486
Santa Fe	63	...	...	...
Mallet	59	72	168	112
Ten-wheel	48	255	364	238
Atlantic	34	46	5	9
Mogul	24	42	61	127
American	19	8	8	27
Mountain	12	24	...	2
Electric	59	94	75	133
Other	73	103	252	106

The total of passenger cars ordered in 1914 was 2,002, as compared with 3,179 in 1913. All but 234 of the 1914 total were specified as being of all-steel construction or as having steel underframes. Of the locomotives ordered in 1914, 1,265, as compared with 3,467 in 1913, 970 or 78 per cent were specified as

CLASSIFICATION OF FREIGHT CARS ORDERED DURING 1914

	All-steel a	Steel frame and steel underframe bc	Steel underframe b	Composite underframe d	Wood f	Not specified	Total	Draft Gear: Spring m	Draft Gear: Friction n	Draft Gear: Not specified
Box	2,693	8,698	25,005	1,902	1,714	200	41,212	13,905	25,884	1,423
Refrigerator	...	...	560	837	1,122	325	2,844	2,409	...	435
Hopper, including Ore	7,632	...	25	...	3	...	7,660	1,390	6,153	117
Gondola	15,570	110	866	30	15	950	17,541	3,792	12,699	1,050
Coal (not otherwise specified)	15	...	150	475	...	...	640	490	150	...
Stock	...	500	607	550	11	...	1,668	1,565	2	101
Flat	2,324	...	...	...	800	64	3,188	1,477	1,227	484
Tank	3,353	...	2	...	100	150	3,605	101	2,344	1,160
Caboose	4	10	115	200	21	55	405	237	85	83
Miscellaneous or not specified	38	252	666	...	266	278	1,501	365	253	883
Total	31,629	9,570	28,996	3,995	4,052	2,022	80,264	25,731	48,797	5,736

having superheaters and 767 or 60 per cent as being provided with brick arches. Another interesting feature is the prominence of the Mikado and Santa Fe types.

The returns relating to cars and locomotives built in 1914 have come from builders in both the United States and Canada and, as was the case in 1913 and 1912, the output of the several railroad shops is also included. Of the total of 104,541 freight cars built, 44,098 were of all-steel construction; 51,515 had steel underframes and only 8,928 were of wood. Of the 3,691 passenger cars built, 3,441 were of all-steel construction, 94 had steel underframes and only 156 were of wood.

Returns from the locomotive builders show that 2,235 locomotives were built, a considerable drop from the 3,467 of 1912. Of the total 1,962 were for domestic use and the remainder, 273, for export.

It does not take an optimist to see that 1915 will be a far more prosperous year for the railway equipment market than the year just past. That, to be sure, is not saying a great deal. It is almost universally agreed, nevertheless, that the tide has turned. The railroads have been awarded at least a considerable part of the 5 per cent increase for which they asked, and that combined with the opening of the stock exchanges should soon put them in a position to purchase the cars and locomotives for which many of them are in urgent need. The railway equipment builders are also beginning to receive new business from abroad, and several large orders have already been placed.

CLASSIFICATION OF PASSENGER CARS ORDERED DURING 1914

	All-steel a	Steel underframe b	Wood f	Not specified	Total	Method of Lighting: Electric x	Gas y	Electric and gas xy	Oil w	Electric and oil xw	Gas and oil yw	None	Not specified
Coaches and Smoking, including Comb. Coach and Smoking	795	148	20	12	975	900	31	10	12	10	...	...	12
Parlor and Chair	96	11	...	...	107	62	4	41	...	...	...	...	...
Dining	49	14	...	1	64	60	...	3	...	...	...	...	1
Comb. Passenger and Baggage	101	5	1	...	107	104	...	...	...	2	...	...	1
Comb. Passenger and Mail	3	...	1	...	4	3	1	...	...	...	...	...	...
Baggage	147	50	14	6	217	144	56	...	5	...	5	...	7
Comb. Baggage and Mail	89	15	10	4	118	60	32	...	10	2	10	...	4
Mail	49	14	2	...	65	34	21	...	...	...	10	...	...
Gas-electric and Gasolene	31	...	...	...	31	17	...	...	...	...	...	...	14
Miscellaneous	49	102	163	...	314	123	...	14	1	1	...	150	25
Total	1,409	359	211	23	2,002	1,507	145	68	28	15	25	150	64

FREIGHT CARS ORDERED IN 1914

Purchaser	No.	Kind		Builder
Alabama & Vicksburg	bn 7	Gondola	80,000	Amer. Car & Fdy.
	bn 34	Box	60,000	Amer. Car & Fdy.
Alabama Great Southern	am 25	Gondola	100,000	Pressed Steel
	am 36	Flat	100,000	Amer. Car & Fdy.
	bm 23	Box	60,000	Lenoir
Alberta & Gt. Waterways	fm 50	Box	60,000	National Steel
Aliqui--a & Southern	an 3	Hopper	200,000	Summers Steel
American Roling Mill Co.	an 6	Gondola	100,000	Pressed Steel
	an 1	Flat	150,000	Pressed Steel
Anderson, A. L., Bros.	an 2	Flat	100,000	Cambria Steel
Atchison, Top. & S. Fe	an 200	Tank	80,000	Pressed Steel
Atlanta & West Point	b 1	Scale test		Amer. Car & Fdy.
Atlantic Coast Line	fm 20	Caboose		Company shops
	an 350	Flat	60,000	Company shops
	an 100	Log	80,000	Cambria Steel
Bangor & Aroostook	an 89	Flat	80,000	Standard Steel
	bn 134	Box	60,000	Standard Steel
	bn 2	Stock	60,000	Standard Steel
	bn 5	Caboose		Amer. Car & Fdy.
Bessemer & Lake Erie	an 1,000	Gondola	100,000	Pressed Steel
	an 250	Hopper	100,000	Pressed Steel
	an 250	Hopper	100,000	Ralston Steel
	an 1,000	Hopper	100,000	Standard Steel
Bethlehem Steel Co	an 1	St'l rf. gon.	100,000	Pressed Steel
Bingham & Garfield	an 2	Flat	100,000	Pressed Steel
	bcn 4	Box	100,000	Pressed Steel
Borough Ash Removal Co.	fm 15	Gondola	80,000	Mount Vernon
Boston & Albany	bn 905	Box	80,000	Amer. Car & Fdy.
	an 500	Gondola	100,000	Standard Steel
Boutwell, Milne & Varnum Co.	am 1	Grout	80,000	Laconia
Boyd & Harvey	fm 2	Flat	20,000	Laconia
	fm 2	Flat	8,000	Laconia
Buffalo Creek & Gauley	an 200	Hopper	100,000	Pressed Steel
Buff., Roch. & Pittsburgh	bn 500	Box	100,000	Standard Steel
	bn 500	Box	80,000	Standard Steel
Butler County	bm 5	Box	80,000	Amer. Car & Fdy.
	am 20	Flat	80,000	Amer. Car & Fdy.
	a 10	Flat	80,000	Amer. Car & Fdy.
Butte, Anaconda & Pac.	an 150	Ore	100,000	Western Steel
California Despatch	b 25	Box	80,000	Amer. Car & Fdy.
California Western R. R. & Navigation Co.	fm 1	Refrig.	60,000	Company shops
Cambria & Indiana	am 500	Hopper	100,000	Cambria Steel
Cambria Steel Co	an 45	Coke	100,000	Cambria Steel
	bn 50	Gondola	100,000	Cambria Steel
Camden Coke Co	an 1	Hopper	100,000	Pressed Steel
Canadian Explosives, Ltd.	am 2	Dump		Can. Car & Fdy.
Canadian Pacific	dm 87	Refrig.	60,000	Company shops
	bcm 450	Box	80,000	Company shops
	am 40	Ore	100,000	Can. Car & Fdy.
	am 150	Flat	80,000	Company shops
	dm 50	Stock	60,000	Company shops
	am 20	Ore	100,000	National Steel Car
Central of Georgia	bn 500	Box	80,000	Standard Steel
Central of New Jersey	a 1	Freight		Company shops
	b 11	Freight		Company shops
	d 1	Freight		Company shops
Central Vermont	f 28	Freight		Company shops
Charlotte Harbor & Nor.	an 30	Phosphate	80,000	Pressed Steel
Chesapeake & Ohio	an 1,000	Hopper	115,000	Standard Steel
	an 1,000	Gondola	115,000	Pressed Steel
Chicago & Alton	b 6	Freight		Company shops
	f 26	Freight		Company shops
	f 10	Refrig.	60,000	Amer. Car & Fdy.
	dm 475	Coal	80,000	Haskell & Barker
Chicago & Ill. Midland	an 250	Gondola	100,000	Haskell & Barker
	an 250	Gondola	100,000	Amer. Car & Fdy.
Chicago & North Western	bcn 3,000	Box	80,000	Amer. Car & Fdy.
	bcn 2,000	Box	80,000	Pullman
	bcn 250	Ballast	100,000	Rodger Ballast
	an 10	Tank	80,000	Amer. Car & Fdy.
Chicago, Burl. & Quincy	dm 500	Box	80,000	Haskell & Barker
	dm 1,000	Box	80,000	Haskell & Barker
	bcm 1	Box	80,000	Company shops
	am 1,250	Gondola	100,000	Haskell & Barker
	dm 750	Refrig.	80,000	Haskell & Barker
	dm 300	Stock	60,000	Company shops
	dm 200	Dbl. dk. stk.	60,000	Company shops
	bm 25	Way		Company shops
Chicago Great Western	an 200	Gondola	100,000	Amer. Car & Fdy.
	bcn 500	Box	80,000	Amer. Car & Fdy.
Chicago, Ind. & Louisville	bcn 254	Box	80,000	Haskell & Barker
Chicago Mill & Lbr. Co.	a 80	Flat	80,000	Amer. Car & Fdy.
	a 70	Flat	80,000	Amer. Car & Fdy.
Cin., N. O. & Tex. Pac.	am 66	Gondola	100,000	Pressed Steel
	bm 19	Box	60,000	Lenoir
Cleve., Cin., Chi. & St. L.	bn 18	Caboose		Company shops
	bn 2,000	Box	80,000	M. D. T. Co.
	bn 1,000	Box	80,000	Amer. Car & Fdy.
	bn 1,500	Box	80,000	Amer. Car & Fdy.
	an 2,500	Gondola	100,000	Standard Steel
Cleveland-Cliffs Iron Co.	1			Western Steel
Cumberland Valley	bn 60	Gondola	100,000	Penn. R. R. shops
Delaware & Hudson	b 20	Freight		Company shops
Delaware, Lack. & W	an 350	Hopper	100,000	Cambria Steel
	an 500	Hopper	100,000	Amer. Car & Fdy.
	bn 400	Box	60,000	Amer. Car & Fdy.
	bn 250	Box	60,000	Western Steel
	bn 100	Automobile.	60,000	Western Steel
	bn 100	Automobile.	60,000	Western Steel
	bn 500	Gondola	80,000	Pressed Steel
	bcn 10	Caboose	60,000	Company shops
Dept. of Rys. & Canals	fm 6	Flat	30,000	National Steel
Duluth & Northern Minn.	2	Caboose		Peteler Car
	f 10	Flat	60,000	Company shops
	f 1	Stock	60,000	Company shops
Duluth, Missabe & Nor.	an 1,000	Ore	100,000	Western Steel
Dungannon Lbr. Co.	f 5	Logging	20,000	Amer. Car & Fdy.
Durham & Southern	f 2	Freight		Company shops
East Broad Top	am 40	Hopper	60,000	Company shops
	fm 1	Hopper	60,000	Company shops
East Tenn. & West. N. C.	fn 2	Hopper	50,000	Company shops
Edmonton, Dunvegan & B. C. Ry.	fm 50	Box	60,000	National
El Paso & Southwestern	an 50	Ore	100,000	Pressed Steel
Erie	an 10	Hopper	140,000	Standard Steel
	bn 200	Gondola	110,000	Standard Steel
	an 200	Hopper	100,000	Pressed Steel
	an 200	Hopper	100,000	Amer. Car & Fdy.
	an 200	Hopper	100,000	Standard Steel
	b 35	Freight		Company shops
	f 51	Freight		Company shops
Federal Furnace Co.	an 1	Ore	100,000	Pressed Steel
Florida East Coast	bn 500	Vent. box.	60,000	Mount Vernon
Fonda, Johnstown & Gloversville	b 1	Caboose		Amer. Car & Fdy.
Forbes, W. S., & Co.	am 1	Tank	80,000	Pressed Steel
Frost-Johnson Lbr. Co.	f 11	Logging	50,000	Amer. Car & Fdy.
Ft. Dodge, Des M. & So.	fm 1,300	Box	60,000	Haskell & Barker
	fm 3	Way	60,000	Haskell & Barker

Purchaser	No.	Kind		Builder
Ft. Worth & Denver City	f 5	Freight ...	.....	Company shops
Georgia	f 4	Freight ...	.....	Company shops
Georgia So. & Florida...	bm 1	Vent. box.	60,000	Lenoir
Gillespie, L. C., & Sons.	a 3	Flat	 80,000	Amer. Car & Fdy.
	a 10	Flat	 60,000	Amer. Car & Fdy.
Grand Trunk	bcm 500	Stock	 30,000	National Steel
Great Northern	fm 1,000	Refrig.	... 60,000	Haskell & Barker
Greenbriar, Cheathem & Elk	f 25	Flat	 80,000	Amer. Car & Fdy.
	f 25	Flat	 80,000	Amer. Car & Fdy.
Hart Otis Car Company.	fm 70	Ballast	 80,000	Can. Car & Fdy.
	am 12	Gen'l Serv.	100,000	Can. Car & Fdy.
Heinz, H. J., Co.	bn 2	Tank	100,000	German-American
Hocking Valley	an 1,000	Gondola	..115,000	Amer. Car & Fdy.
	bcm 8	Gondola	..100,000	Ralston Steel
	b 4	Caboose	... .	Company shops
Hudson Bay Cons. Co...	fm 50	Flat	 60,000	Can. Car & Fdy.
Illinois Central	am 1,000	Gondola	..100,000	Amer. Car & Fdy.
	bm 500	Refrig.	... 80,000	Amer. Car & Fdy.
	bcn 1,000	Box	 80,000	Standard Steel
	bcn 1,000	Box	 80,000	Haskell & Barker
	bcn 1,500	Box	 80,000	Amer. Car & Fdy.
	bcn 1,500	Box	 80,000	Western Steel
Illinois Southern	fm 300	Box	 60,000	Haskell & Barker
Illinois Traction System..	dm 30	Gondola	..100,000	Haskell & Barker
Imperial Oil Co., Ltd....	an 100	Tank	....	Can. Car & Fdy.
	an 10	Tank	....	Can. Car & Fdy.
	fn 100	Tank	.....8,000 g.	National Steel
	an 210	Tank	....	Company shops
Independent Packing Co.	f 100	Refrig.	 60,000	Amer. Car & Fdy.
Index-Galena Lbr. Co....	a 1	Logging	... 60,000	Bettendorf
Indian Refining Co.....	an 3	Tank	 80,000	Chicago Steel Car
Interborough Rapid Tran.	am 10	Dump	....	Magor
Intercolonial	bcm 200	Box	 80,000	Nova Scotia
	bcm 180	Box	 80,000	Can. Car & Fdy.
	bcm 180	Box	 80,000	Eastern Car
	am 4	Pit	150,000	Eastern Car
	an 250	Gondola	..100,000	Eastern Car
	am 200	Flat	 80,000	Nova Scotia
Interstate	an 1	Test weight	.....	Pressed Steel
Jane Oil & Gas Company	100	Tank	....	Penn. Tank Car Co.
	50	Tank	....	Amer. Car & Fdy.
Kanawha & Michigan...	an 1,160	Gondola	..100,000	Ralston Steel
	b 121	Freight	... .	Company shops
Kansas City Southern...	b 100	Ballast	100,000	Amer. Car & Fdy.
Keith Car Co.	an 219	Tank	100,000	Amer. Car & Fdy.
Kentwood & Eastern....	fm 30	Log	 30,000	Selby Loco. & Mach.
Kingan Refrigerator Line	fn 5	Furniture..	60,000	Company shops
Lackawanna & Wyo. Val.	an 15	Hopper	...100,000	Pressed Steel
Lake Champlain & Moriah	am 20	Gondola	..120,000	Pressed Steel
L. Erie, Frank. & Clarion	bn 100	Coal	100,000	Standard Steel
Lake Shore & Mich. So.	b 8	Caboose	... .	Company shops
	b 10	Box	....	Company shops
Lehigh & Hudson River.	an 20	Ore	100,000	Pressed Steel
Lehigh & New England.	b 1	Box	 60,000	Amer. Car & Fdy.
	b 9	Caboose	... .	Amer. Car & Fdy.
Live Oak, Perry & Gulf.	b 8	Freight	... .	Company shops
	f 10	Freight	... .	Company shops
Live Poultry Trans. Co..	275	Poultry	... .	Haskell & Barker
Louer, W. B., Co.....	am 2	Flat	....	Western Steel
Louisiana Ry. & Nav. Co.	an 50	Flat	 60,000	Amer. Car & Fdy.
	2	Work	 80,000	Kilbourne & Jacobs
Louisville & Nashville...	b 500	Box	 80,000	Company shops
	b 100	Stock	 80,000	Company shops
	b 200	Vent. Box.	80,000	Company shops
	a 100	Flat	 80,000	Company shops
	50	Caboose	... .	Company shops
	450	Gondola	..100,000	Company shops
	200	Box	 80,000	Company shops
	75	Refrig.	 80,000	Company shops
	500	Gondola	..100,000	Company shops
Lyon Cypress Lbr. Co...	a 1	Logging	... 60,000	Amer. Car & Fdy.
McCloud River	bcn 15	Box	 80,000	Pullman
	fn 10	Flat	 80,000	Company shops
Magnolia Cotton Oil Co.	a 10	Tank	 80,000	Amer. Car & Fdy.
Manufacturers' Ry. Co. of St. Louis.....	bn 50	Coal	100,000	Amer. Car & Fdy.
Marathon Lbr. Co.....	f 60	Logging	... 60,000	Amer. Car & Fdy.
Michigan Central	b 144	Box	....	Company shops
Milliken Refining Co....	an 50	Tank	100,000	Amer. Car & Fdy.
Mine LaMotte Lead & Smelting	an 9	Hopper	... 80,000	Ralston Steel
Mineral Point & Nor....	bm 6	Caboose	... .	Mount Vernon
Mineral Point Zinc Co..	an 25	Tank	100,000	German-American
Minn., Dakota & Western	fm 100	Flat	 80,000	Haskell & Barker
Mississippi Eastern	a 1	Flat	 80,000	Amer. Car & Fdy.
Missouri & No. Arkansas	bm 6	Caboose	... .	Mount Vernon
Missouri, Kansas & Texas of Texas	bn 200	Ballast	100,000	Amer. Car & Fdy.
Mobile & Ohio.....	bm 1,008	Vent. Box.	60,000	Amer. Car & Fdy.
Montreal Harbor Com..	am 15	Coal	100,000	Can. Car & Fdy.
Morris & Co.....	250	Refrig.	....	Haskell & Barker
Mussens, Ltd.....	am 2	Flat	 80,000	Can. Car & Fdy.
New Eng. Coal & Coke Co.	an 200	Hopper	...100,000	Pressed Steel
New Iberia & Northern.	1	Caboose	... .	Company shops
New Orleans & N'eastern	an 50	Gondola	..100,000	Amer. Car & Fdy.
	bn 47	Gondola	.. 80,000	Amer. Car & Fdy.
	bn 243	Box	 60,000	Amer. Car & Fdy.
New York & Northeastern Cement & Lime Co...	a 6	Cement	... .	Amer. Car & Fdy.
N. Y. Cen. & Hud. River	bn 500	Box	 80,000	Haskell & Barker
	bn 500	Box	 80,000	Barney & Smith
	bg 33	Box	 80,000	Company shops
	b 2	Caboose	... .	Company shops
	b 1	Poling	....	Company shops
N. Y., Ont. & Western..	fm 3	Box	 60,000	Company shops
N. Y., Phila. & Norfolk.	bm 2	Caboose	... .	Penn R. R. shops
Norfolk & Western.....	bn 38	Caboose	... .	Company shops
Northern Central	an 321	Box	100,000	Altoona shops
Nor. Ohio Trac. & Light.	am 4	Gondola	..100,000	Ralston Steel
Northern Pacific	fm 300	Flat	 70,000	Company shops
	amn 250	Ore	100,000	Western Steel
Northwestern Iron Co...	am 1	Flat	100,000	Western Steel
Northwestern Pacific ...	b 3	Caboose	... .	Standard Steel

Purchaser	No.	Kind		Builder
Ocean Shore	b 4	Ballast	100,000	Rodger Ballast
Ohio Valley Elec.....	f 2	Flat	 50,000	Amer. Car & Fdy.
Pacific Great Eastern ...	bm 3	Refrig.	 80,000	National Steel
	am 10	Gondola	..100,000	National Steel
	bm 5	Stock	 60,000	National Steel
	am 3	Caboose	... .	National Steel
	am 40	Flat	 80,000	Can. Car & Fdy.
Pennsylvania	an 41	Box	100,000	Altoona shops
	an 1,000	Box	100,000	Altoona shops
	an 1	Caboose	... .	Altoona shops
	an 243	Box	100,000	Altoona shops
	an 321	Box	100,000	Altoona shops
Pensacola, Ala. & Tenn.	f 11	Freight	... .	Company shops
Phila., Balt. & Wash....	an 156	Box	100,000	Altoona shops
Pittsburgh & Lake Erie..	a 2	Well	....	Company shops
Pittsburg & Shawmut...	am 750	Hopper	...100,000	Amer. Car & Fdy.
	bm 25	Box	 80,000	Amer. Car & Fdy.
	a 1	Flat	100,000	Amer. Car & Fdy.
Poitevent & Favre Lbr. Co	f 1	Caboose	... .	Amer. Car & Fdy.
Pressed Steel Car Co...	an 1	Ore	100,000	Pressed Steel
Quebec Harbor Comm...	am 2	Flat	 80,000	Can. Car & Fdy.
Ray & Gila Valley	an 10	Gondola	..160,000	Standard Steel
Raymond Log Loader Co.	fm 1	Flat	 60,000	Mil. Ref. Trans.
Red River Lbr. Co.....	60	Logging	... .	Seattle Car & Fdy.
Reid, Murdoch & Co....	am 2	Flat	 80,000	Western Steel
Republic Iron & Steel Co.	an 16	Coke	100,000	Pressed Steel
Richm'd, Fred. & Potomac	b 15	Ballast	100,000	Rodger Ballast
Ringling Brothers	fm 11	Flat	 80,000	Barney & Smith
	fm 10	Stock	 80,000	Barney & Smith
Rutland	an 100	Hopper	...100,000	Standard Steel
St. L., Browns. & Mexico	bm 200	Box	 60,000	Amer. Car & Fdy.
	bn 600	Box	 60,000	Amer. Car & Fdy.
	an 20	Tank	100,000	Amer. Car & Fdy.
	bn 10	Caboose	... .	Mount Vernon
St. Louis Refrig. Car Co.	b 114	Freight	... .	Company shops
St. Louis Southwestern..	bgn 1,260	Box	 80,000	Amer. Car & Fdy.
	an 400	Flat	 80,000	Amer. Car & Fdy.
	bn 100	Gondola	..100,000	Amer. Car & Fdy.
	bg 240	Box	 80,000	Amer. Car & Fdy.
	bg 120	Box	 60,000	Amer. Car & Fdy.
	a 1	Flat	 80,000	Amer. Car & Fdy.
South Cons. Co.....	4	Flat	....	Amer. Car & Fdy.
Seaboard Air Line.....	bcn 462	Vent. Box.	60,000	Pressed Steel
Solvay Process Co.....	an 50	Gondola	..150,000	Amer. Car & Fdy.
	an 5	Gondola	..100,000	Bettendorf
South Brooklyn	fm 26	Dump	....	West'n Wh. Scraper
	a 2	Flat	 50,000	Transit Dev. Co.
Southern	bm 1,450	Vent. Box.	60,000	Amer. Car & Fdy.
	bm 750	Vent. Box.	60,000	Mount Vernon
	bm 1,050	Vent. Box.	60,000	Lenoir
	bm 150	Box	 60,000	Lenoir
	bm 100	Stock	 60,000	Lenoir
	bm 25	Poultry	... 60,000	Lenoir
	dm 200	Caboose	... .	Lenoir
	bcn 2	Dynamometer	....	Lenoir
	am 500	Flat	100,000	Amer. Car & Fdy.
Southern Creosoting Co.	am 6	Flat	100,000	Pressed Steel
Standard Oil Co. of Ind.	a 11	Coke	 60,000	Amer. Car & Fdy.
E. H. Stanton Co.....	bm 4	Beer	 60,000	Mil. Ref. Trans.
	fm 11	Beer	 60,000	Mil. Ref. Trans.
	bm 50	Refrig.	 60,000	Mil. Ref. Trans.
	bm 3	Beef	 60,000	Mil. Ref. Trans.
Sumpter Valley	f 6	Freight	... .	Company shops
Sydney & Louisburg.....	bm 25	Hopper	... 30,000	Can. Car & Fdy.
Tacoma Eastern	fn 150	Flat	 80,000	Company shops
Tennesee & No. Carolina	2	Caboose	... .	Company shops
Tennessee Copper Co....	am 10	Ore	100,000	Pressed Steel
Texas Company	an 17	Tank	 60,000	Amer. Car & Fdy.
	an 350	Tank	 80,000	Amer. Car & Fdy.
Texas, Okla. & Eastern..	f 23	Freight	... .	Company shops
Tidewater & Western....	f 1	Freight	... .	Company shops
Toledo & Ohio Central..	an 1,250	Gondola	..100,000	Haskell & Barker
	an 1,250	Gondola	..100,000	Ralston Steel
	an 1	Gondola	..100,000	Ralston Steel
	bcm 2	Gondola	..100,000	Ralston Steel
Toledo, Bowling Gr. & So.	dm 2	Box	 60,000	Barney & Smith
Toledo, Peoria & Western	dm 400	Box	 80,000	Haskell & Barker
Toledo, St. L. & Western	bcn 1,000	Box	 80,000	Haskell & Barker
Toronto, Ham. & Buffalo	bn 3	Caboose	... .	National Steel
Tremont & Gulf.....	an 65	Flat	 80,000	Bettendorf
Union Pacific.....	bgm 2,000	Box	100,000	Amer. Car & Fdy.
	bgm 2,000	Box	100,000	Western Steel
	am 600	Automobile	100,000	Western Steel
	bm 400	Stock	 80,000	Western Steel
	am 1	Box	100,000	Bettendorf
	am 1	Automobile.	100,000	Bettendorf
Union Tank Line.....	an 1,000	Tank	 80,000	Amer. Car & Fdy.
	am 100	Tank	 60,000	Amer. Car & Fdy.
	a 500	Tank	....	Standard Steel
	a 500	Tank	.....6,500 g.	Standard Steel
U. S. Government.....	am 4	Hopper	...100,000	Mount Vernon
Universal Car & Mfg. Co.	am 3	Dump	 40,000	Laconia
Utah Copper Co.....	an 2	Flat	100,000	Pressed Steel
	bcn 4	Box	100,000	Pressed Steel
Utah Railway	am 500	Gondola	..100,000	Pressed Steel
Verde Tunnel & Smelter.	an 5	Flat	100,000	Pressed Steel
Vicks., Shreve. & Pacific.	bn 2	Gondola	.. 80,000	Amer. Car & Fdy.
	bn 23	Box	 60,000	Amer. Car & Fdy.
Virginia & Carolina.....	an 1	Flat	100,000	Pressed Steel
Virginia & S'western Ry.	am 850	Gondola	..100,000	Pressed Steel
Virginian	an 1,000	Gondola	..110,000	Standard Steel
West Jersey & Seashore.	an 9	Box	.....100.000	Altoona shops
Westmoreland Coal Co..	an 100	Hopper	...100,000	Cambria Steel
	a 100	Gondola	.. ..	Cambria Steel
	a 100	Hopper	... .	Cambria Steel
Wood Products Co.....	an 28	Tank	 60,000	German-American
Yosemite Valley	fm 6	Box	 60,000	Seattle Car & Fdy.
	am 10	Log	 60,000	Seattle Car & Fdy.

a Indicates all-steel cars.
b Indicates steel underframe cars.
c Indicates steel frame cars.
d Indicates composite underframe cars.
f Indicates all-wood cars.
g Indicates steel end cars.
m Indicates spring draft gear.
n Indicates friction draft gear.

PASSENGER CARS ORDERED IN 1914

Purchaser	No.	Kind	Builder
Amer. Baptist Pub. Soc..	aw 1	Chapel	Barney & Smith
Arkansas Northwestern..	a 1	Gasoline Mech. Drive	McKeen
Arms Pal. Horse Car Co.	b 27	Horse	Barney & Smith
Atlanta & West Point...	4	Coaches	Amer. Car & Fdy.
Atlantic Coast Line.....	ax 2	Dining	Pullman
	ax 6	Coaches	Amer. Car & Fdy.
	ax 5	Baggage	Amer. Car & Fdy.
	ax 4	Baggage & mail	Amer. Car & Fdy.
Bangor & Aroostook.....	bw 1	Baggage	Amer. Car & Fdy.
Bevier & Southern.....	fw 3	Coaches	Amer. Car & Fdy.
Bos., Rev. Beach & Lynn	fw 4	Coaches	Laconia
Bryan & Central Texas..	ax 2	Gas-electric	Hall-Scott
Butler County	a 1	Gasoline Mech. Drive	McKeen
Cambria & Indiana.....	bx 1	Storage battery	J. G. Brill Co.
Canadian Northern	bx 5	Postal	Preston Car
	fx 40	Colonist	Can. Car & Fdy.
	fx 15	Colonist	Crossen Car
	bx 7	Colonist	Crossen Car
	bx 11	Sleeping	Can. Car & Fdy.
	bx 2	Compt. sleeping	Can. Car & Fdy.
	bx 7	Obs. compt. sleeping.	Can. Car & Fdy.
	bx 7	Dining	Can. Car & Fdy.
	bx 7	Tourist	Can. Car & Fdy.
	fx 10	1st Class Coaches...	Can. Car & Fdy.
	bx 7	1st Class Coaches...	Can. Car & Fdy.
	bx 5	1st Class Coaches...	National Steel
	bx 5	2nd Class Coaches..	Can. Car & Fdy.
	fx 8	Baggage	Preston Car
	fx 5	Baggage	Crossen Car
	bx 15	Baggage	National Steel
Canadian Pacific	ay 12	Postal	Company shops
	ax 7	Dining	Company shops
Catholic Church Ex. Soc. of U. S. A.....	axw 1	Chapel	Barney & Smith
Central N. Y. Southern.	a 2	Gasoline Mech. Drive	McKeen
Central of New Jersey...	ax 30	Coaches	Har. & Hollingsworth
Central Vermont	f 2	Passenger	Company shops
Chicago & Eastern Ill...	ax 2	Postal	Pullman
Chicago Great Western..	a 1	Gasoline Mech. Drive	McKeen
Chicago, Mil. & St. Paul.	axy 4	Parlor	Barney & Smith
	axy 2	Compt. obs. parlor..	Barney & Smith
	axy 2	Cafe-observation	Barney & Smith
	axy 11	Sleeping	Barney & Smith
	axy 3	Obs.-sleeping	Barney & Smith
	axy 1	Dining	Barney & Smith
	axw 2	Pass. & baggage....	Barney & Smith
	axw 2	Mail & baggage.....	Barney & Smith
	axw 10	Coaches	Standard Steel
Chic., St. P., M. & O...	ay 2	Coaches	Pullman
Cin., N. O. & Tex. Pac..	ax 2	Chair	Pressed Steel
	ax 1	Chair & baggage....	Pressed Steel
Coal & Coke.....	fw 1	Baggage & mail.....	Pullman
	fw 3	Coaches	Pullman
Del., Lackawanna & West.	ax 12	Coaches	Pullman
	ax 96	Sub Coaches	Pullman
	ax 14	Pass. & baggage....	Pullman
Denver & Rio Grande...	by 10	Baggage & mail.....	Amer. Car & Fdy.
Duluth & Iron Range....	ay 3	Mail, bagg. & express	Barney & Smith
East Tenn. & West. N. C.	fw 9	Baggage & Mail....	Company shops
Electric Short Line.....	ax 3	Gas-electric	General Electric
El Paso & So. Western..	f 1	Passenger	Company shops
Erie	b 2	Passenger	Company shops
	bx 4	Parlor	Osgood-Bradley
	ax 7	Coaches	Pressed Steel
	ax 1	Pass. & baggage....	Pressed Steel
Florida East Coast.....	ax 2	Dining	Pullman
Grand Trunk	ax 5	Postal	Pressed Steel
	bx 15	Suburban	Can. Car & Fdy.
	bx 40	1st Class Coaches...	Can. Car & Fdy.
	bx 10	1st Class Coaches...	Amer. Car & Fdy.
	bx 5	1st Class & bagg....	Amer. Car & Fdy.
	bx 17	1st Class Coaches...	Osgood Bradley
	by 10	Baggage	Osgood Bradley
	by 5	Express	Osgood Bradley
	by 10	Baggage	National Steel
	bx 6	Dining	Pullman
	bx 5	Parlor	Pullman
	bx 1	Parlor-buffet	Pullman
	bx 1	Dining	Can. Car & Fdy.
	bx 1	Parlor-buffet	Can. Car & Fdy.
Great Northern	bx 30	Coaches	Barney & Smith
	f 75	Expr. refrig.	Barney & Smith
Green Bay & Western...	bw 1	Coach	Central Loco. & Car
Illinois Central	ax 4	Gas-electric	General Electric
	ax 1	Private	Amer. Car & Fdy.
Intercolonial	f 19	Exp.-refrig.	Company shops
	bx 6	1st Class Coaches...	Can. Car & Fdy.
	ax 8	Sleeping	National Steel
	ax 4	Sleeping	Preston Car
	by 2	Postal	Company shops
	by 4	Baggage	Company shops
Kanawha & Michigan....	ay 2	Baggage & mail.....	Amer. Car & Fdy.
	ax 5	Coaches	Amer. Car & Fdy.
Kewaunee, G. B. & W..	bw 1	Coach	Central Loco. & Car
Lake Erie & Western...	ax 3	Baggage & mail.....	Standard Steel
Lake Shore & Mich. So..	bx 1	Baggage	N.Y.C. & H.R. shops
Louisiana & Arkansas....	ay 1	Baggage & mail.....	Barney & Smith
Louisville & Nashville...	8	Coaches	Amer. Car & Fdy.
	6	Baggage	Amer. Car & Fdy.
	4	Baggage & mail.....	Amer. Car & Fdy.
	1	Dining	Amer. Car & Fdy.
Midland Valley	f 1	Pass. & baggage....	Company shops
	f 1	Baggage	Company shops
Minneapolis & St. Louis..	ay 2	Postal	Pullman
Minnesota Northwest....	ax 1	Gas-electric	General Electric
Minn., St.. P. & S. S. M.	a 1	Gasoline mech. drive.	McKeen
Minn., St. P. Roch. & Dubuque	a 2	Gas-electric	General Electric
Missouri & No. Arkansas	fy 1	Pass. & mail.....	Amer. Car & Fdy.
	ax 1	Gas-electric	General Electric
Missouri Pacific	ay 3	Postal	Amer. Car & Fdy.
	ay 4	Paper	Amer. Car & Fdy.
	ay 16	Baggage	Amer. Car & Fdy.
	ax 2	Baggage	Amer. Car & Fdy.
Missouri Pac. (Continued)	ay 11	Baggage & mail.....	Amer. Car & Fdy.
	ax 1	Pass. & baggage.....	Amer. Car & Fdy.
	ax 9	Compt. coaches.....	Amer. Car & Fdy.
	ax 23	Chair cars.....	Amer. Car & Fdy.
	ax 2	Cafe-parlor	Amer. Car & Fdy.
	ax 2	Parlor	Amer. Car & Fdy.
Mobile & Ohio.....	ax 4	Baggage & mail.....	Amer. Car & Fdy.
	ax 4	Baggage & express..	Amer. Car & Fdy.
	ax 8	Coaches	Pressed Steel
Motley County	a 1	Gasoline mech. drive.	McKeen
Mt. Royal Tunnel & Ter.	ax 8	Suburban	Pressed Steel
Nash., Chat. & St. Louis.	ay 1	Baggage	Amer. Car & Fdy.
	ax 4	Postal	Amer. Car & Fdy.
	ax 6	Coaches	Amer. Car & Fdy.
	ax 3	Part. coaches	Amer. Car & Fdy.
	ax 2	Dining cars.....	Amer. Car & Fdy.
N. Y. Cen. & Hud. River	ax 3	Baggage	Company shops
	ax 4	Dining	Company shops
	f 1	Milk	M. D. T. Co.
New York Municipal....	ax 200	Subway	Amer. Car & Fdy.
N. Y., New Haven & H.	ax 30	Coaches	Osgood Bradley
	ax 50	Baggage	Osgood Bradley
	ax 10	Pass. & baggage.....	Osgood Bradley
	ax 10	Bagg. & mail.....	Osgood Bradley
	ax 6	Club	Standard Steel
N. Y., Phila. & Norfolk.	ax 2	Coaches	Standard Steel
Northern Central	ax 3	Pass. & baggage.....	Altoona shops
Northern Pacific	b 40	Exp. refrig.	Western Steel
	ax 21	Sleeping	Pullman
	ax 33	Coaches	Pullman
	ax 14	Smoking	Pullman
	ax 22	Mail & express.....	Pullman
	ax 17	Baggage	Pullman
	ax 6	Dining	Pullman
Northwestern Elevated...	ax 128	Elevated	Cincinnati Car
Northwestern Pacific.....	ay 26	Coaches	Pullman
	ay 4	Chair	Pullman
	ay 6	Baggage	Pullman
	ayw 3	Baggage & mail.....	Pullman
	ayw 3	Mail & express.....	Pullman
Oregon Short Line.....	ax 1	Dining	Pullman
Ore.-Wash. R. R. & Nav.	axy 1	Observation	Pullman
	axy 2	Dining	Pullman
	axy 10	Coaches	Pullman
	axy 2	Parlor	Pullman
	ayw 5	Baggage	Pullman
	ayw 4	Bagg. & mail.....	Pullman
Pacific Electric	ax 22	Motor coaches.....	Pressed Steel
	ax 2	Motor pass. & exp...	Pressed Steel
Pacific Great Eastern....	ax 1	Gas-electric	Hall-Scott
	ax 3	Trailers	Can. Car & Fdy.
	by 3	Passenger	E. H. Wilson & Co.
Pennsylvania	ax 26	Pass. & bagg.	Altoona shops
Phila., Balt. & Wash....	ax 12	Pass. & bagg.	Altoona shops
Portland, Eugene & East.	ax 3	Elec. mail, bagg., exp.	J. G. Brill Co.
Quebec Central	fx 2	Postal	Company shops
Rutland	ax 9	Coaches	Amer. Car & Fdy.
	ax 2	Smoking	Amer. Car & Fdy.
	ax 3	Baggage	Standard Steel
	ax 3	Mail & smoking.....	Standard Steel
	ax 1	Postal	Pressed Steel
	f 8	Milk	M. D. T. Co.
St. Joseph Valley.....	ax 1	Gas. electric	Hall-Scott
St. Louis, B. & Mexico..	bx 6	Coaches	Amer. Car & Fdy.
	bw 4	Baggage & express..	Amer. Car & Fdy.
	by 5	Baggage & mail.....	Amer. Car & Fdy.
San Diego & Arizona....	ax 1	Coach	Pullman
	ax 1	Pass. & baggage....	Pullman
Seaboard Air Line.....	ax 15	Coaches	Pressed Steel
	ax 9	Pass. & baggage....	Pressed Steel
	ax 9	Express	Pressed Steel
	ax 7	Postal	Pressed Steel
	ax 5	Baggage & mail.....	Pressed Steel
Southern	ax 36	Coaches	Pressed Steel
	ax 1	Chair & baggage....	Pressed Steel
	ax 6	Baggage & mail.....	Amer. Car & Fdy.
	ax 2	Chair	Pressed Steel
	ax 5	Baggage & express..	Amer. Car & Fdy.
	ax 5	Pass. & baggage.....	Pressed Steel
	ax 4	Dining	Barney & Smith
Southern Pacific	ax 50	Coaches	Pullman
	ax 1	Postal	Pullman
	a 3	Gasoline mech. drive.	McKeen
Spokane, Port. & Seattle.	ax 12	Coaches	Barney & Smith
	ax 3	Parlor	Barney & Smith
	ax 3	Mail & express.....	Barney & Smith
	ax 2	Baggage	Barney & Smith
	ax 1	Gas-electric	General Electric
Tenn., Kentucky & Nor..	a 1	Gasoline mech. drive.	McKeen
Texas & Pacific.....	ay 2	Postal	Amer. Car & Fdy.
Trona	ax 1	Gas-electric	Hall-Scott
Union Pacific	ax 18	Dining	Pullman
	ax 7	Observation	Pullman
	ayx 30	Chair	Pullman
	ayw 10	Postal	Pullman
	ax 2	Baggage & buffet...	Pullman
	ax 15	Baggage	Pullman
	a 1	Gasoline mech. drive.	McKeen
U. S. Government.....	bx 2	Coaches	Wason
U. S. Gov't (Yuma Val.)	a 1	Gasoline mech. drive.	McKeen
Wabash	bx 7	Postal	Amer. Car & Fdy.
Wash., Balt. & Annapolis Elec.	ax 3	Pass. & baggage....	Cincinnati Car
Waterloo, Cedar Falls & Northern	ax 4	Pass. & baggage....	McGuire Cummings
	ax 3	Parlor	McGuire Cummings
West Jersey & Seashore.	ax 4	Pass. & baggage....	Altoona shops
Willamette-Pacific	a 1	Gasoline mech. drive.	McKeen

a Indicates all-steel cars.
b Indicates steel underframe cars.
c Indicates steel frame cars.
d Indicates composite underframe cars.
f Indicates all-wood cars.
x Indicates electric lighting.
y Indicates gas lighting.
z Indicates acetylene lighting.
w Indicates oil lighting.

LOCOMOTIVES ORDERED IN 1914

Purchaser.	No.	Cylinders.	Total. Weight.	Type.	Builder.
Alabama Central.....	†1	16x24	117,500	2-6-2	Baldwin
Alabama, Florida & So...	1	16x24	104,000	4-6-0	Baldwin
Alabama Great Southern.	*†1	27x30	277,000	2-8-2	American
Alexandria & Western...	†1	16x24	92,800	2-6-0	Baldwin
Arkansas Lbr. Co.....	1	17x24	123,000	4-6-0	Baldwin
Asbestos & Asbestic Co..	1	13x16	60,000	0-6-0	Canadian
Atch., Top. & Santa Fe.	*1	26x26	293,000	4-6-2	Baldwin
Atlanta, Birm. & Atlantic	*†5	24x30	249,900	2-8-2	Baldwin
Atlantic Coast Line.....	*†25	22x28	226,500	4-6-2	Baldwin
Baldry, Yerburgh & Hutchinson	1	15x22	91,000	0-6-0	Canadian
	2	15x22	87,000	0-6-0	Canadian
Baltimore & Ohio.....	*†1	30x32	407,000	2-10-2	Baldwin
	*†30	30x32	410,200	2-10-2	Baldwin
Bangor & Aroostook.....	*†5	23x30	185,000	2-8-0	American
Barrow & Hawkins.....	1		52,000	Geared	Heisler
Bingham & Garfield.....	*1	21x30	197,000	2-8-0	American
Bond Foley Lbr. Co.....	1		104,000	Geared	Heisler
Bos., Rev. Beach & Lynn	†3	14x18	80,000	2-4-4	American
Brenner, Ferd, Lbr. Co..	1	12x16	50,000	0-6-4	Davenport
Brooklyn Cooperage Co..	1	15x20	72,000	2-6-0	Davenport
Brownell Imp. Co.....	†1	20x24	148,800	0-6-0	Baldwin
Brydon, L. B., & Co.....	1	5x10	12,100	0-4-0	Baldwin
Buckland, John M.....	†1	20x26	149,700	0-6-0	Baldwin
Buckwalter, J. R., Lbr. Co.	†1	16x24	102,250	2-6-2	Baldwin
Buffalo Creek.....	*†3	22x28	206,500	0-8-0	American
Buffalo, Roch. & Pitts...	*†10	26½x30	278,000	2-8-2	American
	*†2	24½x26	261,000	4-6-2	American
	*†‡5	23½&37x32	429,000	2-6-6-2	American
Burton, E. P., Lbr. Co...	1	13x22	72,800	2-6-2	Baldwin
Burton-Swartz Cyp. Co..	1	16x24	109,000	2-6-2	Baldwin
Butte, Anaconda & Pac..	4		160,000	Electric	General Elec.
	3		80,000	Electric	General Elec.
Cairo, Truman & So.....	1		84,000	Geared	Heisler
Calcasieu Long Leaf Lbr. Co.	1	16x24	110,000	2-6-2	Baldwin
California Western.....	1	12x12	120,000	Shay	Lima
Cambria & Indiana.....	1		.....	2-8-2	Baldwin
Canadian Northern.....	5	19x26	124,000	0-6-0	Canadian
	4		160,000	Electric	General Elec.
	2		160,000	Electric	Can. Gen'l Elec.
Canadian Pacific.....	*8	22¼x28	225,000	4-6-2	Angus shops
	*5	22½x28	225,000	4-6-2	Angus shops
	*†2	23½x32	286,000	4-8-2	Angus shops
	*3	23½x30	241,000	0-10-0	Angus shops
	*5	19x24	138,000	4-6-0	Angus shops
	*8	19x24	138,000	4-6-0	Angus shops
Canton	1	19x24	118,000	0-6-0	Baldwin
Cape Girardeau Northern	2	18x24	113,200	4-4-0	Baldwin
	1	18x24	115,900	2-6-0	Baldwin
Carnegie Steel Co.....	1	22x26	154,900	0-6-0	Baldwin
Carolina, Atl. & Western	3		.....	4-6-0	Baldwin
	1		.....	0-6-0	Baldwin
Car., Clinchfield & O....	*†2	25x30	280,300	4-6-2	Baldwin
Carolina Spruce Co.....	1		.....	Shay	Lima
Carpenter-O'Brien Co....	3	16x24	113,550	2-6-2	Baldwin
Carr Bros.....	1	9x14	36,000	0-6-4	Davenport
Central Vermont.....	*†3	20x28	188,000	4-6-0	American
Charleston & West. Car..	†1	19x24	122,300	0-6-0	Baldwin
Chesapeake & Ohio.....	*†6	28x29	325,500	2-8-2	American
	*†6	27x28	312,600	4-6-2	American
	*†‡14	22&35x32	428,000	2-6-6-2	American
Chetic'p Gyp. & Plas. Co.	1	13x18	60,000	0-4-0	Canadian
Chicago & Illinois Mid...	2	21x28	219,000	2-8-2	American
Chicago & North Western	*†10	22x26	231,000	4-6-2	American
	*†5	25x28	263,000	4-6-2	American
	*†25	27x32	303,000	2-8-2	American
Chic., Burlington & Q...	*†10	30x32	377,100	2-10-2	Baldwin
	*†1	30x32	377,100	2-10-2	Baldwin
	*†15	30x32	377,100	2-10-2	Baldwin
Chic., Indianapolis & L..	*†5	28x30	341,000	2-10-2	American
Chicago Junction.....	*2	20x26	148,000	0-6-0	American
Chic., Mil. & St. Paul...	*†25	26x30	275,000	2-8-2	American
	1		100,000	Electric	General Elec.
	12		520,000	Electric	General Elec.
Clev., Cin., Chic. & St. L.	*†10	21x28	170,000	0-6-0	American
Coal & Coke.....	2	22x28	183,000	2-8-0	Baldwin
Confederation Cons. Co..	2	13x18	60,000	0-4-0	Canadian
Connecticut Co.....	2		50,000	Electric	Westinghouse
Conway Lbr. Co.....	1	12x16	55,000	2-6-2	Baldwin
Cook Const. Co.....	3	17x24	94,000	0-6-0	Davenport
Cranford Co.....	1		.....	0-4-0	American
Cushing Traction Co.....	1		100,000	Electric	Westinghouse
Death Valley.....	1	18x20	112,700	2-8-0	Baldwin
Delaware & Hudson.....	*†10	24x28	293,500	4-6-2	American
	*15	25x30	258,000	2-8-0	American
Del., Lackawanna & West.	*†4	25x28	290,000	4-6-2	American
	*†13	25x28	291,000	4-6-2	Lima
	*†1	25x28	295,000	4-6-2	Lima
Delta Land & Timber Co.	†1	18x24	143,400	2-8-2	Baldwin
	†1	17x24	124,500	2-8-2	Baldwin
Dempsey Lbr. Co.....	1		124,000	Geared	Heisler
De Queen & Eastern.....	1	16x24	111,000	2-6-2	American
Detroit Terminal.....	*3	21x28	172,000	0-6-0	American
Detroit United.....	1		100,000	Electric	Westinghouse
Dewar, J. A., Co.....	1	10x14	31,000	0-4-0	Canadian
Dill-Cramer-Truitt Corp..	†1	12x16	55,000	2-6-2	Baldwin
Dolese & Shepard.....	1	18x24	104,000	0-4-0	American
Duluth & Northeastern..	2		.....	2-8-0	Lima
	2		.....	Shay	Lima
East Broad Top.....	1	19x24	147,000	2-8-2	Baldwin
Edmonton, Dunvegan & B. C.....	1	19x26	130,000	2-6-0	Canadian
Erie	*†4	25x28	284,000	4-6-2	Baldwin
	*†1	31x32	416,000	2-10-2	Baldwin
Fort Smith & Western...	†1	18x24	113,000	4-4-0	Baldwin
Fort Worth Belt.....	1	19x26	135,000	0-6-0	American
Forburgh Lbr. Co.....	†1	14x22	87,350	2-6-2	Baldwin
Frost-Johnson Lbr. Co....	†1	18x24	107,000	2-6-0	Baldwin
Gainesville & Northwest'n	†1	16x24	106,750	4-6-0	Baldwin
Georgia	*†3	27x30	284,000	2-8-2	Lima
Georgia Coast & Piedmont	2	17x26	115,400	4-6-0	Baldwin
Georgia Southern & Flo..	*6	21x28	192,250	4-6-0	Baldwin
Gould Southwestern.....	†1	13x18	55,650	2-6-0	Baldwin
Grand Trunk.....	*†6	21x26	247,000	4-6-4	Montreal
Great Lakes Stone & Lime Co.....	5	12x18	56,200	0-4-0	Baldwin
Green Bay & Western...	*1	19x26	139,000	2-6-0	American
Green River Lbr. Co.....	1		46,000	Geared	Heisler
Guthrie, A., & Co.....	3	20x26	135,200	0-6-0	Baldwin
	3	20x26	135,200	0-6-0	Baldwin
Harbor Comm. of Quebec	1	19x26	122,000	0-6-0	American
Hoboken Manufacturers'.	1	21x26	157,000	0-6-0	Baldwin
Holly Ridge Lbr. Co.....	1		64,000	Geared	Heisler
Holly Shelter Land Co...	1	12x16	53,400	2-6-2	Baldwin
Hudson Bay Cons. Co...	6	19x26	130,000	2-6-0	Canadian
Illinois Central.....	*†50	27x30	283,850	2-8-2	Baldwin
	*†22	21x26	169,000	0-6-0	American
	*†25		.....	0-6-0	American
Inland Steel Co.....	1	20x24	130,000	0-6-0	American
Intercolonial	*6	24x32	232,000	2-8-0	Canadian
	*†5	21x26	154,400	0-6-0	Canadian
	*5	23½x28	248,400	4-6-2	Montreal
	*5	23½x28	247,400	4-6-2	Montreal
	*6	22x28	200,900	2-8-0	Can. Allis-Chal.
	*†4	21x26	150,000	0-6-0	Can. Allis-Chal.
Inter Mountain.....	4		.....		Lima
Island Central.....	1	10x16	56,000	0-4-0	Davenport
Issaquenna Lbr. Co.....	1		52,000	Geared	Heisler
Jamestown Westfield & Northwestern	1		90,000	Electric	Westinghouse
Johnson, H. C., Co.....	1		46,000	Geared	Heisler
Kettle River Co.....	†1	17x24	91,000	0-6-0	Baldwin
Kewaunee, Green Bay & Western	*†1	19x26	128,000	2-6-0	American
Kneeland-West Lbr. Co..	†1	16x24	105,280	2-6-2	Baldwin
Laclede Gas Light Co...	1	13x18	57,350	0-4-0	Baldwin
Lake Erie, Frank. & Clar.	1	22x28	179,800	2-8-0	Baldwin
	1	18½x26	145,000	4-6-0	American
Laurel River Lbr. Co....	†1	18x24	94,000	2-6-0	Baldwin
Lehigh Coke Co.....	1	20x26	148,000	0-6-0	Baldwin
Lehigh Valley Coal Co...	1	10x16	39,150	0-4-0	Baldwin
	1	10x16	37,500	0-6-0	Davenport
Lewisburg & Ronceverte.	1		52,000	Electric	Westinghouse
Ligonier Valley.....	†1	18x24	121,900	4-4-0	Baldwin
London & Port Stanley..	3		120,000	Electric	General Elec.
Louisiana Saw Mill Co..	1	16x24	85,300	2-6-0	Baldwin
Louisville & Jeffersonville Bridge	*†1	21x28	163,000	0-6-0	American
Louisville & Nashville...	*†24		.....	2-8-2	Company shops
	*†12		.....	4-6-2	Company shops
M'Cloud River.....	*1	20x28	178,700	2-8-2	Baldwin
McLean Hardwood Lbr. Co.	1		84,000	Geared	Heisler
McLean Lbr. Co.....	1		84,000	Geared	Heisler
McNair, R., Shingle Co.	1	13½x18	70,200	0-6-0	Canadian
Macomb, Industry & Littleton	1	16x24	88,000	2-6-0	Davenport
Maine Central.....	*†7	26½x30	275,000	2-8-2	American
Manilla & Southwestern.	1	11x16	46,000	0-4-4	Davenport
Maryland & Pennsylvania	*†2	22x28	193,850	2-8-0	Baldwin
Marsch, John.....	2	10x16	37,500	0-4-0	Davenport
Mason County Logg. Co.	1	20½x28	175,000	2-8-2	Baldwin
Michigan Alkali Co.....	†1	19x24	120,000	0-6-0	Baldwin
Midland Pennsylvania...	†1	18x24	113,000	4-4-0	Baldwin
Minneapolis & St. Louis.	*†15	24x30	258,000	2-8-2	American
Minn. St. P., Roch. & Dubuque	3		.....	Gas-elec.	General Elec.
	3	19x24	115,000	.....	Porter
Missouri & North Ark...	*3	23x28	194,000	2-8-2	Baldwin
	*1	20x26	168,000	4-6-0	Baldwin
Missouri Iron Co.....	1	10x16	37,500	0-4-0	Davenport
Mo., Kan. & Tex. of Tex.	*†30	26½x30	289,000	2-8-2	American
Mobile & Ohio.....	*8	24x30	220,600	2-8-0	American
Motley County	a 1	Gasoline	Mech.	Drive	McKeen
Mount Carbon Co., Ltd..	†1	19x26	137,000	2-6-0	Baldwin
Nash. Chat. & St. Louis.	*†10		.....	2-8-2	Baldwin
	*†6		.....	4-6-2	Baldwin
Nevada Northern.....	*1	21x30	195,000	2-8-0	American
Newark, City of, N. J...	1	13x18	62,550	0-4-0	Baldwin
Newburgh & South Shore	1	20x26	126,000	0-6-0	Baldwin
New Ladysmith Lbr. Co.	1	12x26	57,000	2-4-2	Canadian
New Orleans & No. East.	*†5	22x28	206,800	4-6-2	Baldwin
	*†3	22x28	209,400	2-8-2	Baldwin
New Park & Fawn Grove	1	16x24	93,000	2-6-0	Baldwin
N. Y., New Haven & H.	1		260,000	Electric	General Elec.
Norfolk & Western.....	*‡40	22&35x32	405,000	2-6-6-2	Baldwin
	12		540,000	Electric	West.-Bald.
Northwestern Iron Co...	†1	18x24	100,000	0-6-0	Baldwin
Northwestern Pacific....	4	20x28	181,500	4-6-0	American
	2	21x28	198,000	4-6-0	American
	3	19x24	124,000	0-6-0	American
	4	19x26	159,000	4-4-0	American
	2	20x28	180,000	4-6-0	American
Oak Ridge Coal Co.....	1	16x24	98,000	0-4-0	Davenport
Ocean Shore.....	2	20x26	141,900	2-6-0	Baldwin
Oregon Short Line.....	*†5	25x28	278,000	4-6-2	Lima
	*†5	19x26	154,682	0-6-0	Lima
Oregon-Washington	*4	19x26	154,682	0-6-0	Lima
Ozan Lbr. Co.....	1	18x24	138,500	2-8-2	Baldwin
Pacific Great Eastern....	*4	22x28	190,500	2-8-0	Canadian
	1	16x24	94,000	0-6-0	Davenport
Panama Pacific Exp.....	1		160,000	Electric	General Elec.
	1		120,000	Electric	General Elec.
Pennsylvania	*†6	23½x26	240,000	4-4-2	Juniata shops
	*†28	23½x26	240,000	4-4-2	Juniata shops
	*†84	27x30	319,300	2-8-2	Juniata shops
Pere Marquette.....	*†5	25x28	256,500	4-6-2	Baldwin
Philadelphia & Reading..	*10	21x24	173,490	4-4-0	Baldwin
	5		.....	.....	Company shops
Philadelphia Slag Co.....	1		.....	0-6-0	Baldwin

*Indicates superheater. †Indicates brick arch. ‡Indicates compound.

Purchaser.	No.	Cylinders,	Total Weight.	Type.	Builder.
Phoenix Sand & Grav. Co.	1	10x16	37,000	0-4-0	American
Pittsburgh & Shawmut..	6	22x28	229,000	2-8-2	Baldwin
Portland Southeastern....	1	11x16	40,000	2-6-0	Davenport
Pub. Belt of New Orleans	*2	19x24	129,470	0-6-0	Baldwin
Purington Pav. Brick Co.	2	10x14	31,000	0-4-0	Davenport
Purity Cannel Coal Co...	1	8x12	21,550	0-4-0	Baldwin
Randolph MacDonald Co.	1		.....	0-4-0	American
Reed Cons. Co.....	1		.....	Shay	Lima
Richmond, Fredericksburg & Potomac.....	*†2	24x28	229,000	0-8-0	American
Roper, John L., Lbr. Co.	†1	13x22	78,000	2-6-2	Baldwin
	†1	13x22	78,350	2-6-2	Baldwin
Rowland Lbr. Co.....	†1	13x22	79,600	2-6-2	Baldwin
Russe & Burgess.....	1		46,000	Geared	Heisler
Rutland	*1	20x26	145,000	0-6-0	American
Ryan Car Co.....	1	14x20	80,000	0-4-0	Davenport
St. L., Brownsville & Mex.	*20	21x28	172,000	2-8-0	Baldwin
St. Paul Bridge & Term.	1	20x26	154,000	2-6-0	American
San Diego & Arizona....	1	22x30	216,500	2-8-0	American
	1	22x30	216,500	2-8-0	American
San Joaquin & Eastern..	1	18x24	110,950	4-6-0	Baldwin
San Pedro, Los Angeles & Salt Lake.....	*1	26x28	285,100	2-8-2	Baldwin
Scott, Fred K.....	1		46,000	Geared	Heisler
Scott Lbr. Co.....	1	12x18	55,400	2-4-2	Baldwin
Seaboard Air Line.....	*†10	27x28	319,000	4-8-2	American
	*†19	27x30	282,000	2-8-2	American
Seeds, Enos L.....	1	8x12	19,250	0-4-0	Baldwin
Serge Islet.....	1	7x12	18,500	0-4-0	Davenport
Shafer Bros. Log. Co...	1		126,000	Geared	Heisler
Shawmut Mining Co.....	1	10x16	37,500	0-4-0	Baldwin
Solvay Process Co.....	*†2	20x26	157,000	0-6-0	American
South Dakota Central...	2	20x24	138,000	2-8-0	American
Southern	1	19x26	144,200	4-6-0	Baldwin
	*25	27x30	272,940	2-8-2	Baldwin
	*20	27x30	277,000	2-8-2	American
	*5	24x28	232,000	4-6-2	Baldwin
	*10	24x28	235,000	4-6-2	American
	*2	24x28	208,700	0-8-0	Baldwin
	13	20x26	145,000	0-6-0	Lima
Southern Aluminium Co.	1	17x24	150,750	2-6-2	Baldwin
Southern Pacific.....	*20	26x28	305,000	2-8-2	Lima
	*10	19x26	155,000	0-8-0	Lima
	*1	26x28	280,960	2-8-2	Baldwin
Standard Oil Co.....	1	19x24	108,000	0-6-0	Baldwin
Stimson, J. V., Hdw. Lbr. Co.....	1		52,000	Geared	Heisler
Sydney & Louisburg....	1	21x26	178,500	2-8-0	Montreal
Tampa & Gulf Coast....	3	19x26	144,000	4-6-0	Baldwin
Tennessee & North Caro.	1		.....	.....	Company shops
Tennessee Central.....	2	20x26	166,000	2-8-0	American
Texas Long Leaf Lbr. Co.	†1	15x20	89,200	2-6-2	Baldwin
Tex., Okla. & Eastern..	1	18x24	131,000	4-6-0	American
Transit Dev. Co.....	2		110,000	Electric	General Elec.
Trona	1	22x30	202,600	2-8-0	Baldwin
Tuscarora Valley	1		.....	4-6-0	Baldwin
Union Carbide Co. of Can.	1	15x24	90,000	0-4-0	Canadian
Union Freight.....	1	12x15	109,000	0-4-0	American
Union Pacific	*‡15	26x28	286,117	2-8-2	Lima
	*‡20	25x28	278,000	4-6-2	Lima
	*5	19x26	154,682	0-6-0	Lima
Valley & Siletz.....	1	17x24	119,000	2-6-2	Baldwin
Verde Tun. & Smelter..	*†2	21x26	160,000	0-6-0	American
Virginia & So. Western.	*2	27x30	277,000	2-8-2	American
	*1	21x28	192,250	4-6-0	Baldwin
Wakefield Iron Co.....	†4	17x24	100,550	0-6-0	Baldwin
Waterloo, Cedar Falls & Northern	5		120,000	Electric	Westinghouse
Western Ohio.....	1		70,000	Electric	General Elec.
Willamette Valley So....	1		100,000	Electric	General Elec.
Winnipeg, City of.....	1	19x26	132,000	2-6-0	Canadian

*Indicates superheater. †Indicates brick arch. ‡Indicates compound.

THE SEASON'S TRAFFIC THROUGH "SOO" CANALS

Colonel Mason M. Patrick, U. S. A., reports the amount of commerce through the canals at Sault Ste. Marie for the season of 1914 (242 days) as follows:

Articles	U. S. Canal	Can. Canal	Total
EASTBOUND			
Copper .....tons	88,877	2,887	91,764
Grain .....bu.	36,044,479	32,293,593	68,338,072
Building stone .....tons	.....	.....	.....
Flour .....bbls.	7,511,031	2,203,392	9,714,423
Iron ore .....tons	10,516,927	20,893,142	31,410,069
Pig iron .....tons	14,179	4,200	18,379
Lumber ....M. ft. B. M.	431,019	21,129	452,148
Wheat .....bu.	52,190,614	98,093,481	150,284,095
General mdse. .....tons	173,483	72,701	246,184
Passengers .....No.	15,613	13,177	28,790
WESTBOUND			
Coal, hard .....tons	1,906,418	334,087	2,240,505
Coal, soft .....tons	10,240,259	2,006,457	12,246,716
Flour .....bbls.	512	150	662
Grain .....bu.	.....	.....	.....
Mfd. iron .....tons	162,518	58,786	221,304
Iron ore .....tons	.....	3,696	3,696
Salt .....bbls.	676,892	100,316	777,208
General mdse. .....tons	693,647	377,473	1,071,120
Passengers .....No.	14,179	16,832	31,011
SUMMARY			
Vessel passages .....No.	12,639	6,078	18,717
Reg. tonnage .....net	24,690,381	17,295,958	41,986,339
Freight—			
Eastbound .....tons	14,667,041	24,803,622	39,470,663
Westbound .....tons	13,104,426	2,794,845	15,899,271
Total freight .....tons	27,771,467	27,598,467	55,369,934

In all items except copper and salt the movement was considerably lighter than in 1913. The decrease in soft coal was 23 per cent, in wheat 27 per cent, in other grain 39 per cent, and in passengers 23 per cent.

DIVIDEND CHANGES

The accompanying table shows the changes in amount of dividends declared in the calendar year 1914 as compared with the calendar year 1913. In some cases dividends are declared in one year, payable in the next. Wherever this has occurred the table is based on the time when the dividend was declared, not when it was paid.

All the important changes were, as will be seen, reductions. The Atlantic Coast Line and Louisville & Nashville reductions reflect conservatism rather than absolute necessity, as does also the reduction and payment in scrip by the Southern Railway. The Michigan Central reduction indicates conditions with that company, and the Seaboard Air Line and Central of Georgia reflect temporary disappointment in plans which had been working out successfully, due to conditions in the South since the war. The Buffalo, Rochester & Pittsburgh reflects conservatism and the large falling off in business between the Lakes and Pittsburgh.

DIVIDEND CHANGES

	Declared in 1914.	Declared in 1913.	Present annual rate.	Annual rate in 1913.
Atlanta & Charlotte Air Line.....	9	7	9	7
Atlantic Coast Line.....	6	7	5	7
Bangor & Aroostook.....	3½	3	4	*a*
Buffalo, Roch. & Ptgh.....	5	6	4	6
Central of Georgia, preferred.....	3	6	*b*	6
Chic., Indianapolis & Louis.....	None	3¼	Nothing	3¼
Chic., Rock Island & Pac. Ry.....	None	5	Nothing	5
Cincinnati Northern	None	1½	Nothing	1½
Colorado & Southern, preferred.....	None	4	Nothing	4
Delaware River R. R. & Bridge.....	4	6	2	6
Detroit & Toledo Shore Line.....	*c*	8	8	8
Fonda, Johnstown & Gloversville.....	None	2	Nothing	2
Hocking Valley	7	12	7	7
Louisville & Nashville.....	6	7	5	7
Michigan Central	4	6	2	6
Missouri, Kans. & Tex., preferred...	None	4	Nothing	4
Nevada County Narrow Gage.....	16	5	*d*	*d*
New Orleans & Northeastern.....	1	5	1	5
New York, Ontario & Western, common..	None	2	Nothing	2
Norfolk Southern	2	8	Nothing	8
Northern Central	*e*	8	8	8
Paterson & Ramapo.....	6	4	8	4
Pennsylvania Company	4	7	—	7
Pittsburgh & Lake Erie.....	10	15*f*	10	10
Pittsburgh, Cin., Chic. & St. L., pref..	4½	5	4	5
Pittsburgh, Cin., Chic. & St. L., com..	3½	5	3	5
St. Louis Southwestern, preferred....	1½	4¾	Nothing	4
Seaboard Air Line.....	3	1	Nothing	4
Southern Railway	4½*g*	5	4	5
Union Pacific	*h*	10	8	10
Vandalia	None	4	Nothing	4
Vicksburg, Shreveport & Pac., com....	None	2	Nothing	2

a The annual rate to January, 1913, was 4 per cent, and in July, 1913, a semi-annual dividend of 1 per cent was declared, apparently reducing the annual rate to 2 per cent, which was, however, increased in 1914, as shown in the table.

b The stock is a 6 per cent cumulative stock.

c An extra dividend consisting of $315,000 first mortgage bonds was paid during the fiscal year ended June 30, 1914, to the parent company, the Toledo, St. Louis & Western.

d There is no regular annual rate for this stock.

e Besides the regular dividend of 8 per cent in 1914 an extra dividend of 10 per cent in cash and 40 per cent in stock was paid under the lease agreement of August, 1914, and also 28 per cent extra in cash, which represented the annual 8 per cent dividends on the stock dividend declared in January, 1911, and held up by the courts until August, 1914.

f The regular annual rate on the stock is 10 per cent, but in each year since 1909 up to and including 1913, extra dividends of varying amounts have been declared, the extra dividend in 1913 being 5 per cent.

g The reduced dividend of 2 per cent declared in October, 1914, was paid in interest bearing scrip.

h In January, 1914, an extra dividend, consisting of Baltimore & Ohio preferred to the amount of 12 per cent on the par value of Union Pacific and Baltimore & Ohio common to the amount of 22½ per cent on the par value of Union Pacific and $3 per share of Union Pacific, was declared and paid in July. The regular annual dividend, therefore, was reduced by 2 per cent, since the return on the extra dividend would amount to just about 2 per cent.

ENGLISH RAILWAYMEN'S UNION INVESTS IN MUNICIPAL STOCK.—The National Union of Railwaymen of England has recently effected an investment of $150,000 in stock of the Derby Corporation, Derby being headquarters of the Midland Railway.

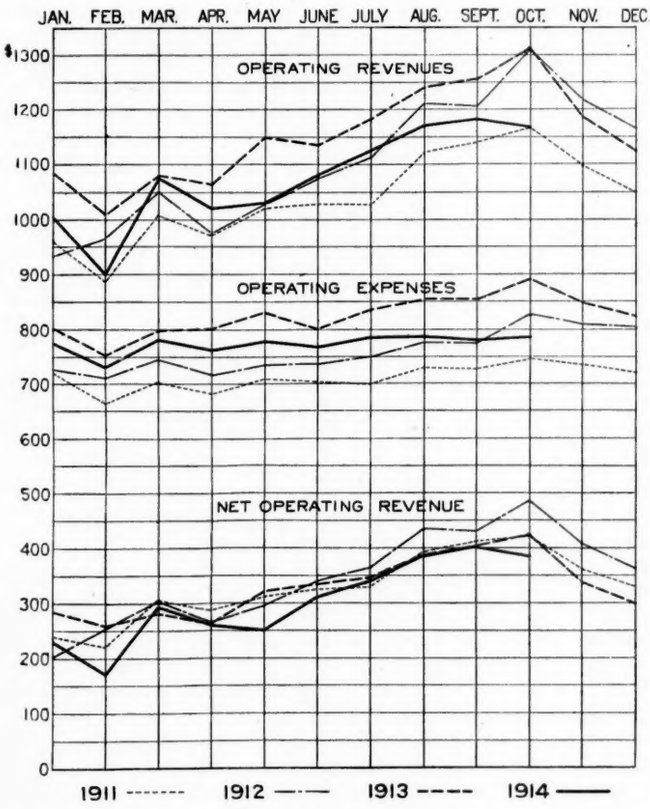
The Trend of Railway Earnings in the Year 1914

Steadily Declining Gross Revenues Are Not Offset by Lower Operating Expenses Despite Economies

By Frank Haigh Dixon

Professor of Economics, Dartmouth College; Chief Statistician, Bureau of Railway Economics

So widespread has been the public interest in the application of the eastern railways for a 5 per cent increase in their freight rates and so much more detailed and exact than usual is the public information as to the financial condition of the railways in general, that a review of the trend of earnings during the year need be little more than a comment on the more significant statistics. Month by month for nearly two years, with only an occasional variation to relieve the monotony, the story has been the same—a slow but continuous fall in gross earnings, a failure to offset this decline altogether by the cutting of expenses in spite of determined attempts that have involved abandonment of many plans for maintenance work, and a resultant heavy decline in net earnings. With the constantly increasing burden of labor costs, the proportion of the expenses



Comparative Chart of Earnings and Expenses

that are fixed beyond the control of the carriers is becoming steadily larger. The result is that in periods of declining traffic the power of the roads to preserve their net by reducing expenses is being lessened. Only by such radical action as the laying off of employees and the reduction of train service can the situation be met in any degree.

Table I, based on the compilations of the Interstate Commerce Commission, presents the revenues and expenses for the fiscal years 1911 to 1914 of all railways having annual operating revenues of $1,000,000 or over, and includes about 90 per cent of the mileage of the country. Were the statistics for the other 10 per cent of the mileage available, the per mile figures would be somewhat less, but the relation of the different years would be only slightly affected. This table shows a figure for operating revenues per mile for 1914 in excess of that for 1911 and 1912, but less than 1913 by 3.4 per cent. Operating expenses could not be reduced in the same proportion, but were held almost stationary, showing an increase in 1914 over 1913 of 0.5 per cent. The result was that net operating revenue declined 12 per cent in 1914 as compared with 1913. In fact the net per mile is the lowest figure since 1908, the year following the panic. As the commission states in its decision on the rehearing of the 5 per cent case, "from whatever comparative standpoint viewed, the net operating revenues of the last fiscal year must be regarded as unduly low."

Depression in business never seems to reach the tax gatherers. The item of taxes shows handsome increases each year, the 1914 per mile figure being 9.6 per cent larger than that of 1913, 14.3 per cent larger than 1912, and 24.9 per cent larger than 1911. As a consequence per mile figures of operating income are even more discouraging than those of net earnings.

For the purpose of bringing the discussion down to include the latest available information, Table II has been prepared showing gross revenues, expenses and net per mile by calendar months for the years 1911 to 1914. It should be explained that the figures for the months of July to December for the years 1913 and 1914 are not exactly comparable with the rest of the figures, because of a change in accounting methods prescribed by the commission, effective July 1 of this year. However, this change does not disturb any of the conclusions to be drawn from the exhibit. It will be observed that operating revenues per mile in 1913 were larger than for either of the two previous years for every month except November and December. October would also have shown a decline except for a change in accounting methods. The year 1914 shows a decline from 1913 for every month thus far reported, the heaviest fall being 11 per cent in the months of February and October. In other words, a decline in earnings beginning in the fall of 1913 has continued since uninterruptedly. Operating expenses throughout the months of 1913 are larger than for the two previous years, although the increase was arrested in December and on the old accounting basis, would have been about at a standstill. The splendid efforts of the roads to meet the situation are shown in the 1914 figures, where the decline in operating expenses per mile shows an almost uninterrupted progress until it reaches the percentage of 11.8 for the last month reported. The outcome as shown in the net revenue columns is not so gratifying as these percentages of decline in operating expenses would lead one to expect. Declines in net operating revenue per mile are shown for every month of 1914 except March, and they run as high as 34 per cent in February and 22 per cent in May. To understand these great variations from month to month, one must take the three factors together of gross revenue, expenses, and net. For example, in March the gross earnings were nearly as large as in the previous year; the policy of economy had been inaugurated and expenses per mile were cut down 2.1 per cent. As a consequence net showed an increase of over 4 per cent. On the other hand, in October, the last month reported, gross fell off 11 per cent. Yet in spite of the fact that the slash in expenses was the greatest of any month of the year, it was impossible to neutralize the heavy decline in business, and net shows a 9.4 per cent decrease per mile as compared with 1913.

The statistics of this table are presented graphically. The heavy black line illustrates the 1914 situation. The striking features on this diagram are the relatively low position of the 1914 curve of operating revenues, the increasing gap between the 1913 and 1914 curves of operating expenses and the per-

sistent depression of the 1914 curve of net revenue below those of the three other years.

Table III presents for the year 1914 in comparison with 1913 the monthly revenues and expenses per mile from January to October, arranged by districts. This makes possible a localization of the favorable and unfavorable factors of the situation, which is obscured in a table presenting the facts for the country as a whole. But a glance at the table shows that roughly speaking, the conditions have been general and that no section thoroughly were the roads able to put their policies of economy into operation that five months showed increases in net revenue, and these included the last three months. The increase for September was nearly 7 per cent. In the west, the month of March alone showed an increase in net revenue, and October's decline amounted to 9.6 per cent. The south showed increases in three months, that for April being as large as 13.6 per cent, yet this favorable exhibit was more than offset by a decline in October of 31.6 per cent.

TABLE I—REVENUES AND EXPENSES IN THE AGGREGATE AND PER MILE OF LINE OF STEAM ROADS HAVING ANNUAL OPERATING REVENUES OF $1,000,000 OR OVER; FISCAL YEARS ENDED JUNE 30, 1914, 1913, 1912 AND 1911

	1914		1913		1912		1911		Increase or decrease per mile of line 1914 over 1913		1912		1911	
	Amount	Per mile of line	Amount	Per mile of line	Amount	Per mile of line	Amount	Per mile of line	Amt.	Per cent	Amt.	Per cent	Amt.	Per cent
Miles of line operated (average)	225,478	...	223,547	...	219,666	...	216,330	...	...	...	...	...	...	...
Total operating revenues	$2,991,391,325	$13,267	$3,069,326,784	$13,730	$2,768,963,853	$12,605	$2,708,791,199	$12,580	*$463	*3.4	$662	5.3	$687	5.5
Total operating expenses	2,155,134,734	9,558	2,126.813,364	9,514	1,914,960,351	8,717	1,857,102,048	8,625	44	0.5	841	9.6	933	10.8
Net operating revenue	836,256,591	3,709	942,513,420	4,216	854,003,502	3,888	851,689,151	3,955	*507	*12.0	*179	*4.6	*246	*6.2
Net revenue — outside operations	def. 1,941,606	def. 9	1,363,638	6	475,164	2	1,250,094	6	*15	...	*11	...	*15	...
Taxes	136,612,209	606	123,655,189	553	116,419,026	530	104,446,682	485	53	9.6	76	14.3	121	24.9
Operating income	697,702,776	3,094	820,221,869	3,669	738,059,640	3,360	748,492,563	3,476	*575	*15.7	*266	*7.9	*382	*11.0

* Decrease. def. Deficit.

seems to have escaped the business depression or to have failed to meet it in part by a curtailment of expenses. In the comparison of the monthly figures, the last month reported, October, showed that the unfavorable business situation had by that time affected railways generally, for there was a decline of 10 per cent in the east, 17 per cent in the south, and 9 per cent in the west. In the east and west, declines in operating expenses per mile appeared in every month, increasing in amount, and reaching in October, 14 per cent in the east and 9 per cent in the west. In the south there were increases in operating costs in five of the ten months reported, but the last month of October disclosed a vigorous handling of the situation. The percentage decline jumped from 4.7 per cent in September to 10.7 per cent in October. With these variations in gross revenue and the introduction of temporary and radical economies by railway executives, startling variations in net revenue are hardly to be wondered at. The east in 1914 as compared with 1913 showed declines in net per mile as heavy as 39 per cent in January and 56 per cent in February. Yet so

What will be the effect of the commission's grant of the increase in rates to the eastern carriers, it is too early to state with any exactness. If it has its much predicted psychological effect and starts a revival in business, the roads should at least for a time gather the increase into their net revenue purse. How long such a happy state of things can continue will depend upon the amount of deferred maintenance which must be resumed, and upon the attitude of labor. If the brotherhoods feel that a large part of the increase belongs to them, they will make the usual moves to put themselves in possession. But in the present temper of the commission, the shippers, and the people generally, they might well sit down and reason together before taking so hazardous a step. After all, the largest single advantage to the roads that will be realized from the commission's decision will be the restoration of confidence to the investing class—an assurance that regulation does not mean oppression, and that administration of public service industries involves reasonable rates from the standpoint of the carrier quite as truly as from that of the shipper.

TABLE II—MONTHLY REVENUES AND EXPENSES PER MILE OF LINE: 1911, 1912, 1913 AND 1914

	Operating Revenues per Mile					Operating Expenses per Mile					Net Operating Revenue per Mile				
				1914					1914					1914	
Month	1911	1912	1913	Amount	Per cent Increase or decrease from 1913	1911	1912	1913	Amount	Per cent increase or decrease from 1913	1911	1912	1913	Amount	Per cent increase or decrease from 1913
January	$959	$932	$1,087	$1,005	*1.5	$720	$728	$803	$776	*3.4	$239	$203	$284	$229	*19.4
February	886	964	1,011	900	*11.0	664	710	752	729	*3.1	221	254	259	171	*34.0
March	1,010	1,051	1,081	1,076	*0.5	703	746	799	782	*2.1	307	305	282	294	4.3
April	970	974	1,065	1,021	*4.1	681	717	802	763	*4.9	288	257	262	258	*1.5
May	1,020	1,030	1,150	1,030	*10.4	709	735	830	779	*6.1	311	295	320	250	*21.9
June	1,028	1,075	1,135	1,079	*4.9	704	737	801	768	*4.1	324	339	334	311	*6.9
July	1,027	1,113	†1,183	†1,124	*4.9	699	750	†836	†785	*6.1	328	363	†347	†340	*2.0
August	1,122	1,211	†1,241	†1,171	*5.6	728	776	†853	†786	*7.9	394	435	†387	†385	*0.5
September	1,139	1,206	†1,257	†1,182	*6.0	727	775	†853	†780	*8.6	412	430	†403	†401	*0.5
October	1,166	1,311	†1,314	†1,169	*11.0	745	827	†891	†786	*11.8	421	484	†423	†383	*9.4
November	1,097	1,218	†1,186	...	....	734	809	†848	...	....	362	409	†338	...	....
December	1,050	1,165	†1,122	...	....	720	803	†824	...	....	329	362	†298	...	....

* Decrease. † Includes "outside operations" (Revenues and Expenses each average from $20 to $25 per mile).

TABLE III—MONTHLY REVENUES AND EXPENSES PER MILE OF LINE, JANUARY TO OCTOBER, 1914, BY DISTRICTS

	Eastern District						Southern District						Western District					
	Operating Revenues		Operating Expenses		Net Oper. Revenues		Operating Revenues		Operating Expenses		Net Oper. Revenues		Operating Revenues		Operating Expenses		Net Oper. Revenues	
Month of 1914	Amt. per mile	Per ct. inc. or dec. from 1913	Amt. per mile	Per ct. inc. or dec. from 1913	Amt. per mile	Per ct. inc. or dec. from 1913	Amt. per mile	Per ct. inc. or dec. from 1913	Amt. per mile	Per ct. inc. or dec. from 1913	Amt. per mile	Per ct. inc. or dec. from 1913	Amt. per mile	Per ct. inc. or dec. from 1913	Amt. per mile	Per ct. inc. or dec. from 1913	Amt. per mile	Per ct. inc. or dec. from 1913
January	$1,661	*11.2	$1,380	*2.3	$280	*38.6	$927	*0.4	$687	2.0	$239	*6.9	$724	*6.0	$523	*6.3	$201	*5.2
February	1,474	*14.2	1,299	*1.9	174	*55.6	842	*5.4	635	*0.6	207	*17.8	651	*9.4	494	*5.3	158	*20.3
March	1,811	0.2	1,402	*0.6	409	2.7	973	1.9	685	1.7	288	2.6	767	*1.8	526	*5.1	242	6.3
April	1,751	*5.1	1,325	*6.8	427	0.9	893	4.6	669	1.9	223	13.6	723	*5.9	531	*5.0	191	*8.3
May	1,773	*12.3	1,370	*7.3	403	*26.1	881	*4.4	669	*2.7	212	*9.2	733	*10.2	541	*5.6	192	*21.0
June	1.860	*6.9	1,355	*5.1	505	*11.6	860	*0.2	646	1.3	214	*4.5	788	*3.9	536	*4.3	253	*2.9
July	1,939	*7.1	1,373	*8.7	566	*2.8	884	1.0	665	0.8	219	1.4	828	*3.9	553	*4.9	275	*1.6
August	2,044	*6.5	1,376	*10.1	667	2.0	887	*2.2	658	*2.2	229	*2.1	863	*5.2	556	*6.7	306	*2.2
September	2,024	*5.5	1,374	*10.4	649	6.9	859	*8.9	642	*4.7	217	*19.0	900	*5.1	553	*7.1	347	*1.4
October	1,963	*10.1	1,384	*13.9	578	0.2	861	*17.3	635	*10.7	226	*31.6	905	*9.3	561	*9.1	345	*9.6

* Decrease.

New Railway Construction Statistics for 1914

Less Track Was Laid in the United States Than for Any Year Since 1895. Canada Also Shows Decrease

During 1914, a total of 1,531.80 miles of new first track was completed in the United States. In the same period 565.58 miles of second track and 29.84 miles of other multiple main track was built and placed in service. In Canada, 1,978.07 miles of first and 152.50 miles of second track was built during the past year. No new mileage was reported from Mexico. These figures are based upon returns made directly to us by the different roads, supplemented by our own construction records, and are as complete as it is possible to compile at this time.

The mileage of new lines built in the United States was practically the same for the three preceding years. This year it fell to one-half the figure for these years, as shown by the accompanying tables and diagram. In 1913, 3,071 miles of new construction was reported, while in 1914 the amount of new line built was 1,532 miles—the lowest figure since 1895. The mileage of new line completed this year was only 25 per cent of that for 1902, the high record year.

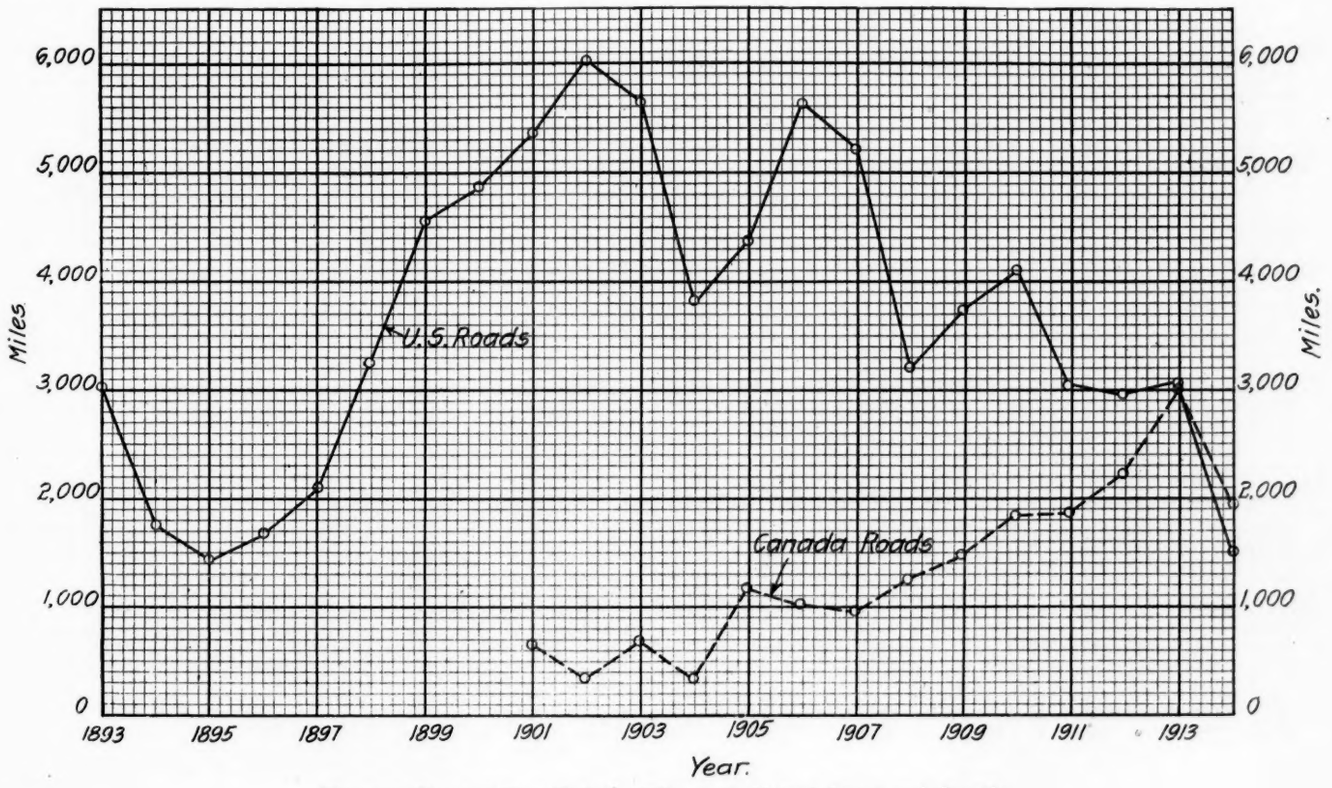


Diagram Showing New Railway Mileage in United States and Canada

The figures of new construction by years, beginning with 1893, are as follows:

1893	3,024	1904	3,832
1894	1,760	1905	4,388
1895	1,428	1906	5,623
1896	1,692	1907	5,212
1897	2,109	1908	3,214
1898	3,265	1909	3,748
1899	4,569	1910	4,122
1900	4,894	1911	3,066
1901	5,368	1912	2,997
1902	6,026	1913	3,071
1903	5,652	1914	1,532

New mileage was reported built in 1914 by 166 companies, including subsidiary companies of larger roads separately. No new or second-track mileage was added in Alaska, Arizona, Colorado, District of Columbia, New Hampshire or Vermont. For some years the state in which the largest new mileage has been built has been in the West. This year a Southern state, Florida, takes the lead, with 220 miles of new lines. Other states with over 100 miles of new lines are California, Idaho and Washington.

The longest continuous line reported completed last year was the extension of the Burlington from Casper, Wyo., to Orin Junction, 61 miles, and the next longest line was that of the Charleston, Atlantic & Western from Andrews, S. C., to Charleston, 57 miles. The Atlantic Coast Line also completed an extension from Dunnellon, Fla., to Wilcox, 50 miles. The greatest total mileage completed by any one road, including its subsidiaries, was built by the Chicago, Milwaukee & St. Paul, with a total of 122 miles. The Southern Pacific System was second, with 92 miles. Sixty-five per cent of the mileage of new lines was built in ten states.

Our reports show that 566 miles of second track was built in 1914 as compared with 1,264 miles in 1913, and 1,073 miles in 1912. This work was distributed through 30 states and territories, although 64 per cent was built in five states. The Chicago, Milwaukee & St. Paul led, with 110 miles of second track between Green Island, Iowa, and Manila. The Atlantic Coast Line completed 62 miles of second track between Selma, N. C., and Parkton, while the Northern Pacific completed 55 miles in Washington, and the Norfolk & Western completed 54 miles in Virginia.

The 30 miles of other multiple main tracks was divided between third track, 10 miles; fourth track, 19 miles; fifth, sixth, seventh and eighth tracks, each 0.1 mile. This was all composed of small projects, the largest of which were 5.35 miles of fourth track on the Delaware, Lackawanna & Western, in Pennsylvania, and 4.53 miles of fourth track on the Philadelphia & Reading, in New Jersey.

The above figures do not include the relocation and rebuilding

of existing lines where the mileage is not increased. Thus, some of the most important projects now under way involving very heavy work, do not appear in the statistics.

At the close of the year, 1,015 miles of new first track was under construction and uncompleted in the United States, in addition to 1,229 miles of new lines surveyed and 2,031 miles projected. On the same date 71 miles of second track was under construction and 194 miles projected. On January 1, 1914, 1,522 miles of new line was under construction, 1,511 miles of additional line had been located and 1,296 miles was projected, while 408 miles of second track was under construction and 249 miles located or projected.

While the mileage of new lines built in Canada did not show as great a decrease as in the United States, the reduction there is also marked. There was 1,978 miles of first track and 152 miles of second track completed in 1914 as compared with 3,013 miles of new first track and 353 miles of second track in 1913. The Canadian Pacific built 620 miles of new line; and the Canadian Northern and its subsidiaries built 515 miles, while the Grand Trunk Pacific built 249 miles. Nearly all of this mileage is in western Canada. The construction of second track was confined entirely to the Canadian Pacific. At the present time, 465 miles of new first track is under construction in Canada, with 2,127 miles additional surveyed and 80 miles projected.

CANADA

1901	658	1908	1,249
1902	342	1909	1,488
1903	687	1910	1,844
1904	316	1911	1,898
1905	1,181	1912	2,232
1906	1,007	1913	3,013
1907	976	1914	1,978

As would be expected, the disturbances in Mexico have caused an entire cessation of railway construction in that country, and no new mileage was reported.

The comparative amounts of various classes of new tracks built in each state during 1914 are shown in the two accompanying tables and in detail in data following.

NEW TRACK BUILT IN 1914.

United States—	No. Cos. building	First track	Second track	Third track	Fourth or more track	Total miles
Alabama	4	1.00	33.81	.....	.....	34.81
Arkansas	5	27.10	.50	.....	.....	27.60
California	9	103.91	18.94	.....	.....	122.85
Connecticut	1	.....	2.10	.....	.....	2.10
Delaware	2	1.15	.....	.....	1.00	2.15
Florida	7	220.46	.....	.....	.....	220.46
Georgia	5	14.66	7.84	.....	.....	22.50
Idaho	3	117.22	12.89	.....	.....	130.11
Illinois	6	3.17	9.24	1.61	2.29	16.31
Indiana	4	12.80	13.15	.....	2.26	28.21
Iowa	4	26.16	110.00	.....	.....	136.16
Kansas	2	11.00	.49	.....	.....	11.49
Kentucky	4	31.57	16.68	.....	.....	48.25
Louisiana	3	7.79	.....	.....	.....	7.79
Maine	2	.21	.61	.....	.....	.82
Maryland	2	.....	12.14	.....	.....	12.14
Massachusetts	2	.....	.13	1.50	1.35	2.98
Michigan	4	18.81	.....	.....	.....	18.81
Minnesota	2	8.42	.....	.....	.....	8.42
Mississippi	2	19.15	.....	.....	.....	19.15
Missouri	4	4.32	4.89	1.70	2.10	13.01
Montana	2	48.13	2.00	.....	.....	50.13
Nebraska	1	.88	.....	.....	.....	.88
Nevada	3	10.01	.70	.....	.....	10.71
New Jersey	2	.80	.....	1.16	4.53	6.49
New Mexico	2	29.47	.....	.....	.....	29.47
New York	6	10.45	9.90	.68	.....	21.03
North Carolina	5	34.00	71.61	.....	.....	105.61
North Dakota	4	63.24	4.33	.....	.....	67.57
Ohio	8	17.05	28.30	.....	.....	45.35
Oklahoma	1	4.00	5.00	.....	.....	9.00
Oregon	7	90.42	2.30	.....	.....	92.72
Pennsylvania	12	62.74	.97	.47	5.35	69.53
Rhode Island	1	.....	.....	.66	.66	1.32
South Carolina	2	66.60	.....	.....	.....	66.60
South Dakota	1	41.30	.....	.....	.....	41.30
Tennessee	4	11.21	45.56	.....	.....	56.77
Texas	6	50.86	.80	.....	.....	51.66
Utah	1	41.95	.....	.....	.....	41.95
Virginia	7	66.05	74.00	.....	.....	140.05
Washington	6	142.73	61.30	2.31	.....	206.34
West Virginia	4	19.80	5.99	.....	.21	26.00
Wisconsin	3	29.78	9.41	.....	.....	39.19
Wyoming	1	61.43	.....	.....	.....	61.43
Total	166	1,531.80	565.58	10.09	19.75	2,127.22
Canada	21	1,978.07	152.50	.....	.....	2,130.57
Mexico	..	.....	.....	.....	.....	.....

NEW TRACK BUILT IN 1913.

United States—	No. Cos. building	First track	Second track	Third track	Fourth or more track	Total miles
Alabama	9	57.60	102.28	.....	.....	159.88
Arizona	4	19.71	92.91	.....	.....	112.62
Arkansas	8	139.29	6.00	.....	.....	145.29
California	11	164.41	65.15	.....	.....	229.56
Colorado	2	53.10	.....	.....	.....	53.10
Connecticut	1	.....	9.16	.....	.....	9.16
Florida	8	104.86	.....	.....	.....	104.86
Georgia	11	81.98	11.37	.....	.....	93.35
Idaho	3	76.67	23.90	.....	.....	100.57
Illinois	7	113.96	34.79	19.79	1.02	169.56
Indiana	4	6.74	104.12	.....	2.43	113.29
Iowa	4	28.66	150.00	.....	.....	178.66
Kansas	2	36.21	.....	.....	.....	36.21
Kentucky	7	48.34	43.12	.....	.....	91.46
Louisiana	4	44.43	.....	.....	.....	44.43
Maine	1	7.20	.....	.....	.....	7.20
Maryland	1	.23	1.54	.....	.....	1.77
Massachusetts	2	9.82	.75	1.70	.....	12.27
Michigan	7	103.93	.....	.....	.....	103.93
Minnesota	5	20.53	70.54	.....	.....	91.07
Mississippi	4	47.00	7.58	.....	.....	54.58
Missouri	4	30.25	3.63	.....	.....	33.88
Montana	6	375.11	1.75	.....	.....	376.86
Nebraska	3	26.47	41.80	.....	.....	68.27
Nevada	2	59.56	38.78	.....	.....	98.34
New Hampshire	1	7.47	.....	.....	.....	7.47
New Jersey	5	1.47	2.55	12.59	11.00	27.61
New Mexico	1	13.00	.....	.....	.....	13.00
New York	9	2.26	36.86	24.13	9.83	73.08
North Carolina	6	103.57	.....	.....	.....	103.57
North Dakota	6	152.08	.....	.....	.....	152.08
Ohio	6	28.00	78.48	13.79	14.78	135.05
Oklahoma	2	34.00	.....	.....	.....	34.00
Oregon	8	122.89	1.14	.....	.....	124.03
Pennsylvania	14	50.76	42.36	11.73	4.20	109.05
Rhode Island	1	.....	2.48	.....	.....	2.48
South Carolina	5	32.70	5.00	.....	.....	37.70
South Dakota	2	38.00	101.00	.....	.....	139.00
Tennessee	5	111.29	13.81	.....	.....	125.10
Texas	14	356.40	10.63	.....	.....	367.03
Utah	4	17.09	.....	.....	.....	17.09
Vermont	2	2.96	.....	.....	.....	2.96
Virginia	5	23.54	65.55	.....	.....	89.09
Washington	7	209.06	1.60	.....	.....	210.66
West Virginia	8	43.61	.33	4.64	.....	48.58
Wisconsin	4	9.38	78.39	.....	.....	87.77
Wyoming	3	55.53	14.53	.....	.....	70.06
Total	238	3,071.12	1,263.88	88.37	43.26	4,466.63
Canada	23	3,012.96	353.33	.....	.....	3,366.29
Mexico	2	38.20	.....	.....	.....	38.20

UNITED STATES.

ALABAMA

First Track

	Miles.	Miles.
Atlanta, Birmingham & Atlantic—Helena to Falliston	1.00	1.00

Second Track

Louisville & Nashville—Decatur to Boyles	28.30	
Nashville, Chattanooga & St. Louis—Between Mile 123 and 129	2.91	
Southern Railway—Birmingham to North Birmingham	2.60	33.81
Total of all track		34.81

ARKANSAS

First Track

Butler County—To Piggott	2.24	
Cairo, Truman & Southern—Judd Hill beyond Weona	10.00	
Fourche River Valley & Indian Territory—Bellevue to Thornbury	4.86	
Helena, Parkin & Northern—To Woodville	6.00	
Little Rock, Maumelle & Western—Not specified	4.00	27.10

Second Track

Fourche River Valley & Indian Territory—Not specified	0.50	0.50
Total of all track		27.60

CALIFORNIA

First Track

Central Pacific (So. Pac.)—Ten miles west of Susanville to Westwood, 21.00 miles; Oakland to Oakland Pier, 2.00 miles; at Fruitvale, 0.30 miles; total	23.30	
Colusa & Hamilton—Near Razor to North of Glenn	8.30	
Minkler Southern (A. T. & S. F. C. L.)—Between Minkler and Exeter	8.88	
Mount Tamalpais & Muir Woods—At Muir Woods	0.72	
Northwestern Pacific—Between Willets and Shively	32.80	
San Diego & Arizona—Coyote Wells to Westwood	8.80	
Southern Pacific—Oakland to Oakland Pier, 1.90 miles; Viola Junction to Viola, 8.50 miles; total	10.40	
Trona Railway—Between Trona and Searles	10.71	103.91

Second Track

Atchison, Topeka & Santa Fe Coast Line—Between Fresno and Calwa	3.25	

CALIFORNIA (*Continued*)

	Miles.	Miles.
Central Pacific (So. Pac.)—Colfax to east of Magra, 8.50 miles; Oakland to Oakland Pier, 2.00 miles; at Fruitvale, 0.30 miles; total	10.80	
Northwestern Pacific—Baltimore Park to San Rafael, 1.35 miles; San Anselmo to San Rafael, 1.54 miles; total	2.89	
Southern Pacific—Oakland to Oakland Pier	2.00	18.94
Total of all track		122.85

CONNECTICUT

Second Track

New York, New Haven & Hartford—New Milford south	2.10	2.10
Total of all track		2.10

DELAWARE

First Track

Maryland, Delaware & Virginia—Cut off to Lewes	1.15	1.15

Fourth Track

Philadelphia, Baltimore & Washington—At Wilmington, 0.37 miles; at Newark, 0.63 miles; total	1.00	1.00
Total of all track		2.15

FLORIDA

First Track

Atlantic Coast Line—Mildale to Eastport, 4.30 miles; Dunnellon to Wilcox, 50.10 miles; total	54.40	
East & West Coast—Between Bradentown and Arcadia	45.00	
Florida East Coast—Lokosee to Okeechobee	38.90	
St. Andrews Bay Railway & Terminal Co.—From A. & St. A. B. Ry., towards St. Andrews	1.00	
Seaboard Air Line—Spur near Early Bird, 4.87 miles; spur near Beaward, 1.96 miles; Bartow to Pembroke, 8.74 miles; Pembroke to Juneau Phosphate Plants, 3.59 miles; total	19.16	
South Florida & Gulf—Between Kenansville and Kissimmee river	6.00	
Tampa & Gulf Coast—Between Gulf Coast Junction and St. Petersburg	56.00	220.46
Total of all track		220.46

GEORGIA.

First Track

Greene County—Good Hope to Monroe	7.00	
Shearwood Railway—Harville to Nevill	1.66	
Waycross & Western—Sirmans to Milltown	6.00	14.66

Second Track

Central of Georgia—Macon to Terra Cotta	3.34	
Southern Railway—Between Armour and Crosskeys	4.50	7.84
Total of all track		22.50

IDAHO

First Track

Intermountain—Not specified	26.00	
Nezperce & Idaho—Lewiston to Tammany	10.00	
Oregon Short Line—Donnelly to Lakeport, 11.73 miles; Menan to St. Anthony, 27.23 miles; St. Anthony to Lincoln, 42.26 miles; total	81.22	117.22

Second Track

Oregon Short Line—Dingle to Pescadero	12.89	12.89
Total of all track		130.11

ILLINOIS

First Track

Chicago & Alton—Eldred to Macoupin creek	1.40	
Fredonia & Reed (Ill. Cent.)—Fredonia to Reeds	1.77	3.17

Second Track

Chicago & Alton—Atlanta to Lawndale	3.85	
Chicago & North Western—At West Chicago	1.36	
Chicago, Peoria & St. Louis—C. B. & Q. Junction to Jacksonville	0.55	
Louisville & Nashville—On St. Louis division	3.48	9.24

Third Track

Pennsylvania Lines West—In Chicago	1.61	1.61

Fourth Track

Pennsylvania Lines West—In Chicago	2.29	2.29
Total of all track		16.31

INDIANA

First Track

Chicago, Terre Haute & Southeastern—Libertyville to Jackson Hill Mine	3.00	
St. Joseph Valley—Angola to North Metz	9.80	12.80

Second Track

Chicago & Erie (Erie)—Ohio State line to North Judson	13.15	13.15

Fourth Track

Pennsylvania Lines West—In Fort Wayne	2.26	2.26
Total of all track		28.21

IOWA

First Track

	Miles.	Miles.
Cedar Rapids & Iowa City—Mt. Vernon to Lisbon	2.00	
Chicago & North Western—Miami south	0.63	
Waterloo, Cedar Falls & Northern—Waterloo to Cedar Rapids	23.53	26.16

Second Track

Chicago, Milwaukee & St. Paul—Between Green Island and Manilla	110.00	110.00
Total of all track		136.16

KANSAS

First Track

Anthony & Northern—Iuka to Byers	11.00	11.00

Second Track

Missouri Pacific—At Kansas City	0.49	0.49
Total of all track		11.49

KENTUCKY

First Track

Carolina, Clinchfield & Ohio—Pool Points to Kentucky-Virginia state line	0.50	
Lexington & Eastern (L. & N.)—Maloney to Tallega	5.07	
Louisville & Nashville—Winchester to Irvine	26.00	31.57

Second Track

Cincinnati, New Orleans & Texas Pacific—Crittenden to a point south of Williamstown	11.36	
Louisville & Nashville—Paris to Winchester	5.32	16.68
Total of all track		48.25

LOUISIANA

First Track

Mansfield Railway & Transportation Co.—Not specified	1.00	
Oberlin, Hampton & Eastern—Hampton south	4.00	
Ouachita & Northwestern—Not specified	2.79	7.79
Total of all track		7.79

MAINE

First Track

Bangor & Aroostook—Main line to St. John River bridge	0.21	0.21

Second Track

Maine Central—Augusta to East Augusta	0.61	0.61
Total of all track		0.82

MARYLAND

Second Track

Cumberland Valley (Penn. R. R.)—Mason-Dixon to S. O. Tower east of Hagerstown	3.46	
New York, Philadelphia & Norfolk—King's creek to Pocomoke	8.68	12.14
Total of all track		12.14

MASSACHUSETTS

Second Track

Boston & Albany—Chelsea to Cary Cut on Grand Junction branch	0.13	0.13

Third Track

Boston & Maine—At Lynn	1.50	1.50

Fourth Track

Boston & Maine—At Lynn	1.35	1.35
Total of all track		2.98

MICHIGAN

First Track

Boyne City, Gaylord & Alpena—Not specified	9.00	
Copper Range—From main line to Dollar Bay	0.90	
Detroit, Bay City & Western—Snover to Sandusky	8.00	
Munsing, Marquette & Southeastern—Extension of North East branch	0.91	18.81
Total of all track		18.81

MINNESOTA

First Track

Duluth, Missabe & Northern—Sharon to Shiras Mine, 0.93 miles; Helmer to Deacon Mine, 1.34 miles; Silver Yard to Prindle Mine, 1.91 miles; total	4.18	
Northern Pacific—Loerch to Wilcox Mine, 1.64 miles; Ironton to Duluth-Brainerd Mine, 2.60 miles; total	4.24	8.42
Total of all track		8.42

MISSISSIPPI

First Track

Cybur, Gulf & Northwestern—Cybur to Picayune	10.00	
Yazoo & Mississippi Valley (Ill. Cent.)—Brazil to Swan Lake	9.15	19.15
Total of all track		19.15

MISSOURI

First Track

	Miles.	Miles.
Butler County—Linstead to Poplar Bluff	0.82	
Kansas City Terminal—In Kansas City	2.50	
Rolla, Ozark & Southern—Between Rolla and Anutt	1.00	4.32
Second Track		
Kansas City Terminal—In Kansas City	4.60	
Missouri Pacific—At Kansas City	0.29	4.89
Third Track		
Kansas City Terminal—In Kansas City	1.70	1.70
Fourth Track		
Kansas City Terminal—In Kansas City	1.70	1.70
Fifth or More Tracks		
Kansas City Terminal—In Kansas City, 0.10 miles each of fifth, sixth, seventh and eighth tracks; total	0.40	0.40
Total of all track		13.01

MONTANA

First Track

Chicago, Milwaukee & St. Paul—Roy Junction to Winifred, 23.00 miles; between Lewistown and Great Falls, 1.65 miles; between Lewistown and Grass Range, 1.50 miles; total	26.15	
Montana Eastern (Gt. Nor.)—Newton to Lambert	21.98	48.13
Second Track		
Chicago, Milwaukee & St. Paul—At Lewistown terminals	2.00	2.00
Total of all track		50.13

NEBRASKA

First Track

Hastings & North Western (U. P.)—In Hastings yard	0.88	0.88
Total of all track		0.88

NEVADA

First Track

Nevada Short Line—Between Oreans or Nenzel and Rochester	9.00	
Tonopah & Tidewater—Gold Center to Beatty Junction	1.01	10.01
Second Track		
Central Pacific (So. Pac.)—Sparks Yard	0.70	0.70
Total of all track		10.71

NEW JERSEY

First Track

Central of New Jersey—At Manville	0.80	0.80
Third Track		
Philadelphia & Reading—Between Hopewell and Belle Mead	1.16	1.16
Fourth Track		
Philadelphia & Reading—Between Hopewell and Belle Mead	4.53	4.53
Total of all track		6.49

NEW MEXICO

First Track

Denver & Rio Grande—Caliente to La Madera	16.44	
El Paso & Southwestern—Burro Mountain Junction to Tyrone	13.03	29.47
Total of all track		29.47

NEW YORK

First Track

Degnon Terminal—In borough of Queens, New York City	0.25	
Lehigh Valley—Seneca Junction to Lehigh Valley Junction, 5.71 miles; connection at Cayuga Junction, 0.48 miles; total	6.19	
New York Central & Hudson River—Extension of Rome branch at Rome	4.01	10.45
Second Track		
Central New England—Highland to Loyd	2.30	
Long Island—Syosset to Cold Spring, 1.73 miles; in Flushing, 1.65 miles; total	3.38	
New York Central & Hudson River—Extension of Rome branch at Rome	4.22	9.90
Third Track		
New York, New Haven & Hartford—Woodlawn Junction east	0.68	0.68
Total of all track		21.03

NORTH CAROLINA

First Track

Atlantic & Carolina—Between Warsaw and Kenansville	10.00	
Virginia-Carolina—From North Carolina-Virginia state line to Jefferson	21.00	
Watauga & Yadkin River—From one mile west of Elkville to Dennys	3.00	34.00
Second Track		
Atlantic Coast Line—Selma to Parkton	62.00	
Seaboard Air Line—Hamlet to Coguac	9.61	71.61
Total of all track		105.61

NORTH DAKOTA

First Track

	Miles.	Miles.
Minneapolis, St. Paul & Sault Ste. Marie—Makoti to Van Hook	23.92	
Montana Eastern (Gt. Nor.)—Between Fairview, Mont., and Watford, N. D.	7.58	
Northern Pacific—Golden Valley to Kildeer	31.74	63.24
Second Track		
Great Northern—Surrey to Minot	4.33	4.33
Total of all track		67.57

OHIO

First Track

Hocking Valley—At Pomeroy	1.60	
Lake Erie & Eastern (L. S. & M. S. and P. & L. E.)—Through Youngstown, 6.25 miles; connection with P. & L. E. at Youngstown, 0.64 miles; total	6.89	
Pennsylvania Lines West—Strasburg branch	7.92	
Pittsburgh & Lake Erie—Connection with L. E. & E. at Youngstown	0.64	17.05
Second Track		
Baltimore & Ohio—Between Sherwood and Defiance	4.85	
Chicago & Erie (Erie)—Between Marion and Indiana state line	7.37	
Lake Erie & Eastern (L. S. & M. S. and P. & L. E.)—At Youngstown	0.64	
Pittsburgh & Lake Erie—At Youngstown	0.64	
Pittsburgh, Cincinnati, Chicago & St. Louis—Through Piqua, 2.26 miles; Alton to Glade Run, 7.59 miles; total	9.85	
Toledo Terminal Railroad Company—Not specified	4.95	28.30
Total of all track		45.35

OKLAHOMA

First Track

Oklahoma, New Mexico & Pacific—Between Ardmore and Ringling	4.00	4.00
Second Track		
Oklahoma, New Mexico & Pacific—Not specified	5.00	5.00
Total of all track		9.00

OREGON

First Track

Columbia & Nehalem—Columbia towards Nehalem river	8.00	
Oregon & California (So. Pac.)—Extension Portland-Airlie branch, 0.30 miles; Newberg loop, 1.10 miles; Hillsboro loop, 1.70 miles; Forest Grove loop, 3.10 miles; at Whiteson, 0.10 miles; total	6.30	
Oregon-Washington Railroad & Navigation Co.—Vale to Riverton, 17.48 miles; between Coyote Junction and Stanfield, 2.34 miles; total	19.82	
Portland, Eugene & Eastern (So. Pac.)—End of Willamette Falls division to Willamette river, half mile south of Oswego	1.10	
C. A. Smith Timber Company's Line—South of Myrtle Point	4.00	
Willamette-Pacific (So. Pac.)—Northeast of Vaughn to near Acme, 47.00 miles; North Bend to Marshfield, 4.20 miles; total	51.20	90.42
Second Track		
Oregon & California (So. Pac.)—Extension Portland-Airlie branch, 0.50 miles; Portland-Corvallis branch at Portland, 0.60 miles; total	1.10	
Sumpter Valley—Between Baker and Prairie	1.20	2.30
Total of all track		92.72

PENNSYLVANIA

First Track

Baltimore & Ohio—Between Callery and Foxburg	0.30	
Bessemer & Lake Erie—Curtisville to Mine	3.43	
Buffalo, Rochester & Pittsburgh—Craigsville to end of line	2.61	
Gleasonton & Paddy's Run—Gleasonton to mines	8.50	
Lake Erie, Franklin & Clarion—Elss to Harvey mine	1.50	
Lehigh & New England—Crane Junction to Catasauqua, 5.43 miles; Gap Junction to Palmerton, East, 1.23 miles; at Benders Junction connecting track, 0.29 miles; total	6.95	
Monongahela Railroad—Martin to Vanzandt	9.10	
Pennsylvania Railroad—Millbell to Cowansburg, 14.05 miles; extension of branch lines, 2.63 miles; total	16.68	
Philadelphia & Reading—In Philadelphia	0.52	
Pittsburgh & Shawmut (P. S. & N.)—Kittanning to Nicholson mines	7.00	
Pittsburgh, Cincinnati, Chicago & St. Louis—Langeloth to Verner mine	6.15	62.74
Second Track		
Baltimore & Ohio—On Pittsburgh & Connellsville	0.97	0.97
Third Track		
Philadelphia & Reading—At Philadelphia	0.47	0.47
Fourth Track		
Delaware, Lackawanna & Western—West of Henryville to Analomink	5.35	5.35
Total of all track		69.53

RHODE ISLAND

Third Track

New York, New Haven & Hartford—Pawtucket to Central Falls	0.66	0.66

RHODE ISLAND (*Continued*).

Fourth Track

	Miles.	Miles.
New York, New Haven & Hartford—Pawtucket to Central Falls	0.66	0.66
Total of all track		1.32

SOUTH CAROLINA

First Track

Charleston, Atlantic & Western—Andrews to Charleston	57.00	
Northwestern Railroad of South Carolina—Manville Junction to Rose Hill	9.60	66.60
Total of all track		66.60

SOUTH DAKOTA

First Track

Fairmount & Veblen—Veblen to Grenville	41.30	41.30
Total of all track		41.30

TENNESSEE

First Track

Louisville & Nashville—Maplewood to Brentwood Junction	9.71	
Tennessee Railway—Branch line extension	1.50	11.21

Second Track

Illinois Central—Gibbs to Trimble, 18.46 miles; Dyersburg to Fowlkes, 4.14 miles; South Fork to Curve, 10.34 miles; total	32.94	
Louisville & Nashville—Maplewood to Overtons	4.65	
Nashville, Chattanooga & St. Louis—Chattanooga division, mile 2.22 to mile 4.93, 2.71 miles; between miles 123 and 129, 3.20 miles; mile 135.4 to mile 136.36, 0.96 miles; mile 147.4 to mile 148.5, 1.10 miles; total	7.97	45.56
Total of all track		56.77

TEXAS

First Track

Galveston, Harrisburg & San Antonio (S-C. L.)—Bay Shore Junction to Seabrook	11.23	
Houston & Texas Central (S-C. L.)—Between Eureka and Stella Junction	1.23	
San Antonio, Uvalde & Gulf—Odem to Corpus Christi	17.30	
Texas & New Orleans (S-C. L.)—Turpentine to Angelina river	4.10	
Texas Southeastern—Between Neff and Bluff City	17.00	50.86

Second Track

San Antonio, Fredericksburg & Northern—At Fredericksburg	0.80	0.80
Total of all track		51.66

UTAH

First Track

Utah Railway—Utah Junction to Black Hawk, 21.10 miles; Provo to Thistle, 20.85 miles; total	41.95	41.95
Total of all track		41.95

VIRGINIA

First Track

Carolina, Clinchfield & Ohio—Virginia-Kentucky state line to Bear Hollow	29.00	
Mill creek—Hotchkiss to The Wilderness	15.00	
New River, Holston & Western—Rocky Gap to Suitars	13.80	
Norfolk & Western—Connections at Norfolk, 0.20 miles; connection at Riverton, 0.05 miles; total	0.25	
Virginia-Carolina—Creek Junction to Virginia-North Carolina state line	8.00	66.05

Second Track

Atlantic Coast Line—Between Stony Creek and Virginia state line	18.50	
Norfolk & Western—Not specified	54.31	
Southern Railway—Between Monroe and Amherst	1.19	74.00
Total of all track		140.05

WASHINGTON

First Track

Goodyear Lumber Company's Line—West of Callum	2.50	
Great Northern—Between Wenatchee and Oroville	23.00	
Northern Pacific—Between Tacoma and Tenino, 31.74 miles; Edgecomb to Kruse spur, 3.79 miles; total	35.53	
Oregon-Washington Railroad & Navigation Company—Between Ayer Junction and Spokane	3.30	
Puget Sound & Willapa Harbor (C. M. & St. P.)—Maytown to Doty	38.00	
Seattle, Port Angeles & Lake Crescent (C. M. & St. P.)—Port Angeles west, 24.60 miles; Port Angeles to Dungeness river, 15.80 miles; total	40.40	142.73

Second Track

Great Northern—Metum to Interbay	4.76	
Northern Pacific—Tacoma to Tenino, 42.72 miles—Easton to Lester, 11.97 miles; total	54.69	
Oregon-Washington Railroad & Navigation Company—In Spokane	1.85	61.30

Third Track

Northern Pacific—Seattle to Inter Bay	2.31	2.31
Total of all track		206.34

WEST VIRGINIA

First Track

Baltimore & Ohio—Magnolia cut-off, Orleans Road to Little Cacapon	12.00	

WEST VIRGINIA (*Continued*).

	Miles.	Miles.
Norfolk & Western—Extension King Mountain branch, 0.33 miles; Briar Mountain branch connection, 0.11 miles; Mate Creek branch, 6.05 miles; total	6.49	
Tug River & Kentucky (L. & N.)—Not specified	0.17	
Virginian Railway—Allen Creek branch	1.14	19.80

Second Track

Norfolk & Western—Not specified	0.99	
Virginian Railway—Mullens to Taft	5.00	5.99

Fourth Track

Baltimore & Ohio—Between Weaverton and Grafton	0.21	0.21
Total of all track		26.00

WISCONSIN

First Track

Chicago, Milwaukee & St. Paul—Merrill northwest	17.00	
Chicago, St. Paul, Minneapolis & Omaha—Kaiser to Park Falls	5.99	
Fairchild & North-Eastern—Between Foster and Cleghorn	6.79	29.78

Second Track

Chicago, Burlington & Quincy—Charme to Lynxville, 8.13 miles; between Purdy and Alma, 1.28 miles; total	9.41	9.41
Total of all track		39.19

WYOMING

First Track

Chicago, Burlington & Quincy—Casper to Orin Junction	61.43	61.43
Total of all track		61.43

CANADA

First Track

Alberta & Great Waterways—Edmonton, Alta., to Lac La Biche	137.00	
Canadian Northern—In Alberta, Brazeau branch, Saunders to Nordegg, 17.44 miles; In Manitoba, Grosse Isle branch, Chatfield to Hodgson, 27.18 miles; total	44.62	
Canadian Northern Alberta (Can. Nor.)—Near Mount Geekie	2.48	
Canadian Northern Ontario (Can. Nor.)—In Ontario, between Ottawa and North Bay, 130.00 miles; In Quebec, between Grenville and Montreal, 39.00 miles; total	169.00	
Canadian Northern Pacific (Can. Nor.)—In British Columbia	248.00	
Canadian Pacific—In Manitoba, Gimli to Riverton, 26.00 miles; In Saskatchewan, Weyburn west mile 231 to mile 317, 86.00 miles; Expanse southwest mile 35 to mile 50, 15.00 miles; Assiniboia north to mile 7, 7.00 miles; In Alberta, between Swift Current and Bassano mile 94.5 to mile 230, 135.50 miles; Monitor-Kerrobert line, 72.00 miles; Alberta Central branch, 64.50 miles; Coronation northwest, 25.00 miles; Suffield southwest mile 57 to mile 84, 27.00 miles; Gleichen-Shepard line, 13.00 miles; In British Columbia, Kootenay Central, Edgewater to Skookumchuk, 67.00 miles; total	538.00	
Edmonton, Dunvegan & British Columbia—Sawridge, Alta., to Smoky River	124.00	
Esquimalt & Nanaimo (Can. Pac.)—Vancouver Island, B. C., Qualicum to Courtenay	36.00	
Essex Terminal—In Ontario, In town of Sandwich	1.10	
Glengarry & Stormont (Can. Pac.)—Between St. Polycarpe Junction, Ont., and Cornwall	27.00	
Grand Trunk Pacific—In British Columbia—between Hutton and Rose Lake, 217.30 miles; In Saskatchewan, Talmage to Weyburn, 14.50 miles; Central Butte to Riverhurst, 17.60 miles; total	249.40	
Greater Winnipeg Water District—Between St. Boniface, Man., and Indian Bay, Shoal Lake, Ont.	96.25	
Hudson Bay—Between The Pas, Man., and Port Nelson	120.00	
Intercolonial—In New Brunswick, Nelson to Nelson Junction, 2.69 miles; In Nova Scotia, North Sydney to Leitches Creek, 4.30 miles; total	6.99	
Lake Erie & Northern (Can. Pac.)—Between Galt, Ont., and Port Dover	19.00	
Quebec Central—In uebec—to a point 10 miles east of St. Sabine	5.00	
Reid Newfoundland Co.—In Newfoundland not specified	33.00	
St. John & Quebec—In New Brunswick not specified	30.00	
Toronto, Hamilton & Buffalo—Smithville, Ont., to Dunville	14.90	
Vancouver, Victoria & Eastern (Gt. Nor.)—Coalmont, B. C., to Brooks	25.58	
Winnipeg & Northern (Can. Nor.)—Between Winnipeg, Man., and Grand Marais	50.75	1,978.07

Second Track

Canadian Pacific—In Ontario, between Azilda and Cartier, 17.00 miles; Nemegos-Chapleau, 7.20 miles; Healy-Bolkow, 6.00 miles; White River-King, 9.30 miles; Salim-Pays Plat, 9.50 miles; Manitoba division, Kemnay to Broadview, 10.00 miles; Saskatchewan division, Broad view to Swift Current, 41.00 miles; British Columbia division, Revelstoke to Tranquille, 52.50 miles; total	152.50	152.50
Total of all track		2,130.57

SOUTH MANCHURIA RAILWAY TO BUILD LOCOMOTIVES FOR KOREA.—The shops of the South Manchuria Railway at Shahokou are now building locomotives for the companies' lines and have recently completed one of consolidation type. It is said that these shops will construct locomotives for the Korean railways, which are also of standard gage.

Mileage of American Railroads Block Signaled

A Total of Eighty-eight Thousand Miles. Nearly Thirty Thousand Miles Equipped with Automatic Signals

The mileage of railroad in the United States operated under the block system on January 1, 1915, as shown in the large table printed herewith, is 88,128 miles. The increase over the total given in our table of one year ago is 943 miles; but this comparison is somewhat inaccurate for reasons given with last year's statement. The more significant total is that of automatic block signal mileage; 29,689 miles of road, as compared with 26,123 reported a year ago and 26,569 reported a year ago by the government. This increase of something over 3,000 miles of automatic signaling compares with 3,827 miles increase in 1913. The year 1914 makes a better showing than was to have been expected. The 1913 increase was very large, compared with years before that. Now, as in former years, the smaller increase in the grand total is explained by the fact that a large mileage of automatic signals was installed to take the place of the manual or telegraph block system. The detailed comparison of the totals of the *Railway Age Gazette* tables for three years is as follows:

	Automatic		Manual		Total	
	Jan. 1.	Increase over prev. year.	Jan. 1.	Increase over prev. year.	Jan. 1.	Increase over prev. year.
1915.....	29,869	3,566	58,443	decrease	88,128	943
1914.....	26,123	3,827	61,062	5,127	87,185	8,954
1913.....	22,296	1,961	55,935	decrease	78,231	1,821

These figures are to be understood with the usual conditions, with which the reader is assumed to be familiar. Some of the roads with light traffic, reporting the manual block system in use, employ it usually only for passenger trains. A number of roads, notably the Pennsylvania, exclude from their statement of total mileage operated, all lines on which there is regularly in service only one locomotive. Our statements, like those issued by the government, deal only with passenger lines; yet a number of roads have installed automatic block signals on lines used exclusively for freight; and in some of the statements these freight lines have been included.

Four roads appear in the list this year for the first time: the Canadian Pacific, the Rock Island Southern, the South Dakota Central and the Western Maryland. The signals reported by the last-named road are automatic.

Below will be found the usual statements of proposed new work, including proposed interlocking signals. As in former years, many prominent roads reply that their plans for 1915 are not yet ready to be given out. The more important items of proposed new mileage are those under the heads of the Boston & Maine, the Chicago, Milwaukee & St. Paul, the Delaware & Hudson, the El Paso & South Western, the Erie, the Great Northern, the Illinois Central, the Louisville & Nashville, the Alabama Great Southern and the Texas & Pacific. In two cases, and perhaps in others, automatic block signal items here noted refer to installations which are to take the place of the manual block system.

LINES IN CANADA WORKED BY BLOCK SYSTEM.

	Automatic miles of road	Manual miles of road	Total miles of road
Canadian Pacific (East of Fort William)....	226	4,428[1]	4,654
Canadian Pacific (Western Lines).....	...	....	....
Canadian Government (Intercolonial).....	43	....	43
Dominion Atlantic	...	273	273
Grand Trunk	2	3,619[3]	3,621
Michigan Central	245[2]	....	245
Toronto, Hamilton & Buffalo.....	62	....	62
Total	578	8,247	8,898

[1]Includes 366 miles double track; also includes 73 miles single track, worked by electric train staff.
[2]All double track.
[3]Includes 653 miles double track.

The Panama Railroad is now operated by the block system; automatic, 40 miles single track, 7 miles double track; manual, single track, 7 miles.

Canada.—The block system is now operated in Canada on 8,825 miles of road, of which 578 miles is automatic, as reported by the six companies given in the table in the previous column.

PROPOSED NEW WORK

The Atchison, Topeka & Santa Fe plans this year to install a mechanical interlocking plant of 20 levers, at Erie, Kan.; and the Gulf, Colorado & Santa Fe will install a similar plant at Longview, Tex.

The Baltimore & Ohio Chicago terminal is planning to extend its automatic block signaling 2.33 miles during the coming year.

The Boston & Maine expects to install automatic block signals this year on its line between White River Junction, Vt., and Wells River, 40 miles.

The Carolina, Clinchfield & Ohio expects to open during the coming year an extension to Elkhorn City, Ky., and on this line there will be automatic signals over a length of two miles, through Sandy Ridge tunnel, single track.

The Central New England plans this year to install automatic signals on two miles of new second main track.

The Chicago & North Western expects to install three electric interlocking plants at drawbridges during the coming year; two at Milwaukee, with 33 and 45 levers respectively, and one at Deering, Ill.

The Chicago, Milwaukee & St. Paul proposes this year to install automatic block signals on 101 miles of its line, double track, now operated by the manual block system.

The Chicago, Rock Island & Pacific plans to install this coming year an electric interlocking plant at Walnut street, Peoria, Ill., 28 levers.

The Cumberland Valley has under construction at Chambersburg, Pa., an electric interlocking plant of 24 levers.

The Delaware & Hudson expects to extend its automatic block signals about 23 miles during the coming year.

The Delaware, Lackawanna & Western plans to install an electro-pneumatic interlocking plant of 31 levers at the drawbridge over Buffalo river.

The Detroit, Toledo & Ironton expects to install interlocking plants during the coming year at three points, two of which are joint as between this road and the Detroit United Railways.

El Paso & Southwestern.—This company plans to install automatic block signals on 29 miles of road during the coming year.

The Erie plans during the coming year to install automatic block signals, in place of the manual block system, on 43 miles of road, double track, as follows: Solon, Ohio, to Cleveland, 16 miles, and Kent, Ohio, to Leavittsburg, 27 miles.

The Grand Trunk plans to install automatic block signals during the coming year on its line between Forty-seventh street, Chicago, and Thornton Junction, Ill., about 17 miles.

The Great Northern plans during the coming year to install automatic block signals on 200 miles of its line. The signaling plans for 1915 include also two mechanical interlockings at Duluth, 16 levers each; one of 22 levers at Aberdeen, S. D., and one of nine levers at Calumet, Minn.

The Illinois Central statement shown in the table includes 7 miles, automatic, single track, only recently completed, between Mercer, Ky., and Graham; and the Yazoo & Mississippi Valley includes 20 miles just finished on the line between Baton Rouge, La., and Kenner. These two installations are parts of a considerable program of new construction, the balance of which, about 195 miles, will be completed during 1915. This new work, yet

LENGTH OF RAILWAYS IN THE UNITED STATES WORKED BY THE BLOCK SYSTEM, JANUARY 1, 1915.

Name of Railway	Miles of Road — Automatic — Single track	Automatic — Two or more tracks	Automatic — Total	Non-automatic — Single track	Non-automatic — Two or more tracks	Non-automatic — Total	Total both kinds	Total passenger lines operated	Percentage operated under block system
Albany Southern	...	...	...	27	16	43	43	43	100
Ann Arbor	...	...	...	1	...	1	1	...	...
Arizona & New Mexico†	1	...	1	...	...	...	1	...	...
Atchison, Topeka & Santa Fe (incl. Coast lines and Gulf, C. & S. F.)	122	441	563	1,021	510	1,531	2,094	9,905	21
Atlanta & West Point	...	6	6	...	...	...	6	86	13
Atlantic Coast Line	11	249	260	250	13	263	523	3,745	13
Baltimore & Ohio System:									
Baltimore & Ohio	39	351	390	1,925	789	2,714	3,104	3,104	100
Baltimore & Ohio Chicago Terminal	1	20	21	...	...	...	21	43	48
Baltimore & Ohio Southwestern	35	25	60	866	37	903	963	963	100
Cincinnati, Hamilton & Dayton	118	27	145	738	25	763	908	908	100
Baltimore, Chesapeake & Atlantic	...	...	...	87	...	87	87	87	100
Bangor & Aroostook	6	...	6	...	...	...	6	621	1
Bessemer & Lake Erie	...	...	...	65	129	194	194	186	100
Boston & Maine	499	627	1,126	...	...	...	1,126	2,220	50
Boston Elevated (elevated lines)	...	17	17	...	...	...	17	...	...
Boston, Revere Beach & Lynn	...	14	14	...	...	...	14	14	100
Buffalo, Rochester & Pittsburgh	140	83	223	175	41	216	439	408	100
Butte, Anaconda & Pacific	8	...	8	...	...	...	8	58	14
Canadian Pacific	...	...	...	199	...	199	199	...	...
Carolina & North Western	...	...	...	3	...	3	3	133	...
Carolina, Clinchfield & Ohio	10	...	10	...	...	...	10	256	...
Central New England	2	38	40	224	...	224	264	264	100
Central of Georgia	...	...	...	66	7	73	73	1,910	4
Central of New Jersey	41	201	242	...	...	...	242	466	52
Central Vermont	...	...	...	396	6	402	402	402	100
Chesapeake Beach	...	...	...	2	...	2	2	...	...
Chesapeake & Ohio†	...	455	455	1,532	21	1,553	2,008	2,008	100
Chicago & Alton	411	188	599	106	37	143	742	1,025	72
Chicago & Eastern Illinois	58	154	212	189	32	221	433	1,013	43
Chicago & North Western	208	927	1,135	2,565	25	2,590	3,725	7,332	51
Chicago & Western Indiana	...	21	21	...	7	7	28	28	100
Chicago, Burlington & Quincy	159	81	240	7,954	780	8,734	8,974	8,974	100
Chicago Great Western	257	86	343	48	...	48	391	1,471	25
Chicago, Indianapolis & Louisville	294	...	294	...	...	...	294	578	51
Chicago Junction	...	...	...	1	...	1	1	12	...
Chicago, Milwaukee & St. Paul	366	839	1,205	2,936	245	3,181	4,386	8,705	53
Chicago, Ottawa & Peoria	16	...	16	...	...	...	16	108	15
Chicago, Peoria & St. Louis	1	...	1	246	...	246	247	247	100
Chicago, Rock Island & Pacific	691	283	974	1,087	...	1,087	2,061	8,141	25
Chicago, St. Paul, Minneapolis & Omaha	22	173	195	464	1	465	660	1,672	...
Chicago, Terre Haute & Southeastern	1	...	1	...	...	...	1	...	...
Colorado Midland	...	...	...	2	...	2	2	...	...
Columbia & Puget Sound	10	9	19	...	...	...	19	51	37
Copper Range	...	...	...	80	...	80	80	78	100
Cornwall & Lebanon	...	...	...	9	13	22	22	22	100
Cumberland & Pennsylvania	...	...	...	4	3	7	7	31	...
Cumberland Valley	4	56	60	106	...	106	166	164	100
Delaware & Hudson	164	247	411	...	35	35	446	802	55
Delaware, Lackawanna & Western	285	533	818	...	...	...	818	964	84
Denver & Salt Lake†	...	...	...	35	...	35	35	214	...
Duluth & Iron Range	...	17	17	...	...	...	17	200	7
Durham & Southern	...	...	...	57	...	57	57	59	96
Elgin, Joliet & Eastern	7	3	10	9	...	9	19	...	...
El Paso & Southwestern	159	...	159	...	...	...	159	1,027	...
Empire United (electric)	40	6	46	...	...	...	46	...	...
Erie[1] (including controlled lines)	28	894	922	655	230	885	1,807	2,218	77
Florence & Cripple Creek	...	...	...	5	...	5	5	96	...
Fort Dodge, Des Moines & Southern	18	...	18	102	...	102	120	126	95
Grand Trunk	...	81	81	842	242	1,084	1,165	1,165	100
Great Northern	189	346	535	320	...	320	855	6,905	12
Hocking Valley	2	...	2	239	...	239	241	338	71
Hudson & Manhattan†	...	9	9	...	...	...	9	9	100
Illinois Central	187	433	620	5	...	5	625	4,572	13
Yazoo & Mississippi Valley	31	...	31	...	...	...	31	1,370	2
Illinois Traction	120	2	122	...	...	...	122	443	27
Interborough Rapid Transit Co. (New York)	...	7[2]	7	...	...	...	7	63	...
Kanawha & Michigan	2	...	2	2	...	2	4	164	...
Kentucky & Indiana Terminal†	...	...	...	3	8	11	11	11	100
Kentwood & Eastern†	...	...	...	3	...	3	3	30	...
Lackawanna & Wyoming Valley	...	...	...	1	2	3	3	23	...
Lehigh & Hudson River	72	...	72	...	...	...	72	75	100
Lehigh & New England	3	...	3	...	...	...	3	73	...
Lehigh Valley	71	515	586	594	52	646	1,232[3]	1,218	100
Ligonier Valley	...	...	...	14	...	14	14	14	100
Long Island	...	114	114	29	10	39	153	361	42
Louisville & Nashville	215	55	270	112	46	158	428	4,714	9
Maine Central	437	63	500	...	...	...	500	1,103	45
Portland Terminal	5	12	17	...	...	...	17	18	...
Maryland, Delaware & Virginia	...	...	...	78	...	78	78	78	100
Minneapolis & St. Louis	...	...	...	11	...	11	11	1,538	...
Minneapolis, St. Paul & Sault Ste. Marie	...	...	...	1,422	12	1,434	1,434	3,489	40
Missouri, Kansas & Texas	102	10	112	10	...	10	122	3,175	3
Missouri Pacific	59	38	97	3,541	10	3,551	3,648	3,889	93
St. Louis, Iron Mountain & Southern	114	13	127	2,640	169	2,809	2,936	3,254	90
Mobile & Ohio	5	...	5	38	...	38	43	949	4
Monongahela†	...	2	2	...	...	...	2	59	...
Munising, Marquette & Southeastern	...	...	...	4	...	4	4	119	...
Nashville, Chattanooga & St. Louis	...	...	...	111	...	111	111	1,230	9
Newburgh & South Shore	...	...	...	1	5	6	6	...	...
New York & Long Branch	...	38	38	...	...	...	38	38	100
New York Central Lines:									
Boston & Albany	3	209	212	...	1	1	213	378	56
Chicago, Indiana & Southern	5	...	5	239	59	298	303	303	100
Cleveland, Cincinnati, Chicago & St. Louis (incl. Peoria & E.)	24	98	122	561	283	844	966	1,865	51
Lake Erie & Western (incl. Northern Ohio)	48	9	57	815	...	815	872	872	100
Lake Shore & Michigan Southern	28	577	605	1,007	44	1,051	1,656	1,662	...
Dunkirk, Allegheny Valley & Pittsburgh	...	...	...	90	...	90	90	90	100
Lake Erie & Pittsburgh†	...	...	...	28	...	28	28	...	...
Michigan Central	...	517	517	740	49	789	1,306	1,749	74
New York Central & Hudson River	2	729	731	1,665	570	2,235	2,966	2,983	...
Pittsburgh & Lake Erie	...	159	159	3	...	3	162	166	...
Toledo & Ohio Central	3	4	7	127	...	127	134	400	33
Zanesville & Western	1	...	1	...	...	...	1	85	...
New York, Chicago & St. Louis	146	12	158	...	...	...	158	523	30
New York, New Haven & Hartford	2	342	344	222	241	463	807	1,803	44
New York, Ontario & Western	48	150	198	...	...	...	198	493	40

LENGTH OF RAILWAYS IN THE UNITED STATES WORKED BY THE BLOCK SYSTEM, JANUARY 1, 1915

Name of Railway	Miles of Road — Automatic — Single track	Automatic — Two or more tracks	Automatic — Total	Non-automatic — Single track	Non-automatic — Two or more tracks	Non-automatic — Total	Total both kinds	Total passenger lines operated	Percentage operated under block system
New York, Philadelphia & Norfolk	9	...	9	49	54	103	112	112	100
Cape Charles†	...	...	...	9	...	9	9	9	100
Norfolk & Western	99	487	586	1,001	25	1,026	1,612	1,879	89
Northern Pacific	684	504	1,188	308	18	326	1,514	5,567	27
Northwestern Pacific	11	16	27	...	...	...	27	517	...
Oregon Electric	1	7	8	...	...	...	8	154	...
Pennsylvania:									
Grand Rapids & Indiana	...	...	...	225	2	227	227	546	41
Pennsylvania (east of Pittsburgh and Erie)	...	730	730	2,947	948	3,895	4,625[4]	4,625[5]	100
Pennsylvania Co.	...	528	528	836	206	1,042	1,570	1,651	95
Pittsburgh, Cincinnati, Chicago & St. Louis	...	30	30	741	621	1,362	1,392	1,415	98
Vandalia	6	...	6	303	61	364	370	782	...
Peoria & Pekin Union	...	...	...	...	6	6	6	16	...
Pere Marquette	109	7	116	...	...	...	116	1,629	...
Philadelphia & Reading (and subsidiaries)	40	518	558	293	63	356	914	1,354	67
Quincy, Omaha & Kansas City and Iowa & St. Louis†	...	...	...	307	...	307	307	307	100
Queen & Crescent Route:									
Alabama & Vicksburg	78	...	78	...	...	...	78	142	54
Alabama Great Southern	269	...	269	...	...	...	269	290	92
Cincinnati, New Orleans & Texas Pacific	215	117	332	4	...	4	336	336	100
New Orleans & Northeastern	97	16	113	...	...	...	113	196	57
Richmond, Fredericksburg & Potomac	...	19	19	10	59	69	88	80	100
Rock Island Southern	...	...	...	80	...	80	80	80	100
St. Louis & San Francisco	697	34	731	...	...	...	731	5,259	...
St. Louis Merchants' Bridge Terminal	...	6	6	...	1	1	7	10	...
St. Louis Southwestern (less than 1 mile)	...	...	...	...	...	...	...	...	...
San Francisco-Oakland Terminal	...	4	4	...	...	...	4	...	...
San Pedro, Los Angeles & Salt Lake	4	...	4	...	...	...	4	...	...
Seaboard Air Line	...	...	...	317	...	317	317	3,060	10
South Dakota Central	...	...	...	103	...	103	103	103	100
Southern†	6	145	151	1,938	289	2,227	2,378	6,604	...
Virginia & Southwestern	...	...	...	2	...	2	2	...	...
Southern Illinois & Missouri Bridge	...	5	5	...	...	...	5	5	100
Southern Pacific, Atlantic system:									
Galveston, Harrisburg & San Antonio	280	...	280	...	...	...	280	1,321	21
Houston & Texas Central	3	...	3	...	...	...	3	...	...
Houston, East & West Texas	3	...	3	...	...	...	3	...	...
Iberia & Vermillion	16	...	16	...	...	...	16	16	100
Louisiana Western	104	...	104	...	...	...	104	208	50
Morgan's Louisiana & Texas	95	...	95	...	...	...	95	364	...
Texas & New Orleans	110	...	110	...	...	...	110	448	24
Southern Pacific, Pacific system[6]	2,397	389	2,786	51	...	51	2,833	6,965	40
Spokane & Inland Empire (less than 1 mile)	...	...	...	...	...	...	...	...	...
Spokane, Portland & Seattle	...	7	7	...	...	...	7	540	...
Staten Island	...	24	24	...	...	...	24	24	100
Terminal R. R. Assn. of St. Louis	...	6	6	...	1	1	7	13	...
Texas & Pacific	1	...	1	...	...	...	1	...	...
Tidewater Power Co.†	...	...	...	6	...	6	6	11	...
Toledo, Peoria & Western (less than 1 mile)	...	...	...	...	...	...	...	...	...
Toledo, St. Louis & Western	...	...	...	188	...	188	188	450	41
Ulster & Delaware	24	...	24	...	...	...	24	130	19
Union (Pittsburgh)	...	1	1	1	...	1	2	...	...
Union Pacific	653	820	1,473	11	...	11	1,484	3,588	41
Oregon-Washington R. R. & Navigation Co.	605	27	632	1	...	1	633	1,995	31
Oregon Short Line	530	93	623	...	...	...	623	1,981	...
Virginia & Kentucky (less than 1 mile)	...	...	...	...	...	...	...	...	...
Virginian	...	...	...	13	...	13	13	481	...
Wabash†	10	100	110	1,539	221	1,760	1,870	2,041	...
Wabash Pittsburg Terminal	...	4	4	...	...	...	4	60	...
Washington, Baltimore & Annapolis	...	14	14	...	...	...	14	...	...
Washington Southern	..	6	6	...	26	26	32	32	100
Washington Terminal	...	2	2	...	...	...	2	2	100
Washington Water Power Co.	22	...	22	...	...	...	22	22	100
Western Maryland	63	...	63	...	...	...	63	663	9
Western Pacific	11	...	11	...	...	...	11	935	...
Total	13,408	16,281	29,689	51,137	7,406	58,443	88,128	...	...

† No report received; figures repeated from last year. [1] Erie: 84 miles of freight lines block signaled. [2] Includes only the four-track line. [3] Includes some lines operated for freight only. [4] Includes passenger lines only. [5] Excluding lines on which only one engine is in service. [6] The discrepancy in totals is due to a duplication of mileage in which both automatic and manual systems are used.

to be finished, includes 62 miles additional between Baton Rouge and Kenner, and 14 short sections on the Illinois Central, the more important of which are the following: Gibbs, Tenn., to Trimble, 18 miles, double track; Dyersburg, Tenn., to Curve, 15 miles, double track; and the following, all single track: Leitchfield, Ky., to Horse Branch, 24 miles; Mona Siding, Iowa, to Benson, 10 miles; Tip Top, Ky., to Graham, 10 miles; Coleman, Ill., to Plato Center, 9 miles, and Cecilia, Ky., to East View, 8 miles.

The Interborough Rapid Transit Company, New York City, plans during the coming year to install electro-pneumatic interlocking at Chatham Square junction, on the elevated lines, the machine to be of 23 levers. This will take the place of a mechanical interlocking.

The Louisville & Nashville during the coming year will complete work, now under way, which will equip with automatic block signals the line between Cincinnati, Ohio, and Winchester, Ky., 97 miles. About 90 miles of this division of the road—Winchester to Corbin—has been equipped with automatics during the past year.

New York Central Lines.—The Cleveland, Cincinnati, Chicago & St. Louis will install electric interlocking at Nokomis, Ill., 32 levers.

The New York, Ontario & Western contemplates the installation during the coming year of a mechanical interlocking plant at Campbell Hall, N. Y., of 56 levers.

The Norfolk & Western has prepared plans for the installation of automatic block signals on 25 miles of road, which plans will be carried out whenever there shall be sufficient improvement in business to warrant the expenditure.

The Oregon Short Line will install at Pocatello, Idaho, an electric interlocking machine, having 8 working levers and 3 spare spaces. The machine will be type "F" of the Union Switch & Signal Company.

The Pennsylvania advises that the only signaling plans which have been completed for the coming year are those in connection with the electrification of the main line from Philadelphia to Paoli, 20 miles, four-track. In connection with this work, the electro-pneumatic interlocking at Bryn Mawr will be replaced by Union electric interlocking, type F; and all of the

signals between Overbrook and Paoli will be taken out and replaced by "beam-light" signals.*

Queen & Crescent.—The Cincinnati, New Orleans & Texas Pacific is to install electric interlocking, 12 working levers, at McLean avenue, Cincinnati; and mechanical interlockings at Robbins, Tenn., 13 levers, and at Mile 225, 7 levers. The Alabama Great Southern will install at Chattanooga two electric interlockings, one of 16 working levers and one of 47; and the plans for the year include new automatic block signals on 22 miles of road.

The Southern Pacific plans to install three large power interlockings during the coming year; at Davis, Cal., and at Bloomington, Cal., the General Railway Signal Company's model 2—eighty levers at Davis and twenty-four levers at Bloomington: at Fourth street, San Francisco, the Union Switch & Signal Company's electro-pneumatic, 107 levers.

The Texas & Pacific has under construction automatic block signals on 23 miles of line, to be ready to put in service early in 1915. It is expected that 17 miles additional will be equipped with automatic block signals during the year, or 40 miles altogether.

The Toronto, Hamilton & Buffalo has contracted with the General Railway Signal Company for three interlockings on the branch line from Smithville to Dunnville, namely; at the crossing of the Michigan Central at Attercliffe, 28 levers, and at the crossing of the Grand Trunk, 16 levers; and at Dunnville, crossing of the Grand Trunk, 16 levers. All of these are mechanical interlockings.

*"Beam light" is a term used to designate a signal consisting wholly of lights, uncolored; and the indications are given by means of shape. A row of four lights, arranged horizontally, means stop; a similar group inclined 45 degrees upward means caution, and a row arranged vertically means proceed. By putting over the lights a suitable hood, the signals are made visible in daylight, and tests have shown that they can readily be seen in bright sunlight at a distance of 4,000 ft.

UNEMPLOYMENT RESULTING FROM RAILROAD DEPRESSION

For the purpose of obtaining an indication of the amount of unemployment that has resulted from the unsatisfactory conditions of the railroad business, with the consequent effect on the railroad supply business, which has been one of the chief causes of the general business depression, the *Railway Age Gazette* asked the railroads entering Chicago for a statement of the number of men in their employment on August 1 and June 30, 1914, as compared with the number employed on those dates in 1913. It also asked the members of the Railway Business Association, including the principal companies throughout the country that make and sell materials, equipment and supplies to railroads, for the number of men in their employment on August 1, 1914, as compared with the number employed under normal conditions. August 1 was selected, instead of a later date, because the European war began on that date and the figures as of that date exclude effects which are attributable to the war.

As the total operating revenues of the railroads of the United States for the fiscal year ending June 30, 1914, showed a reduction of only 3.4 per cent per mile as compared with the previous year, indicating that general business was not far below normal, while their operating income was reduced 15.7 per cent, the reductions in forces made by the railroads and the railway supply companies manifestly have resulted from conditions affecting the railroad business that did not exist in the general business situation. This is further supported by the fact that of 32 supply companies that advised us they had made no reductions in force, 22 are only partially dependent on the railroads for business.

Statements were received from 20 railroad systems entering Chicago, covering their entire mileage, and including nearly all of the larger systems entering that city, and from 152 companies that sell to railroads, although the information received was not in all cases entirely complete, and some companies gave the number employed now instead of on August 1. A compilation of the information furnished us shows the following:

20 RAILROADS

Number employed June 30, 1913	879,492
Number employed June 30, 1914	809,929
Reduction	69,563
Per cent reduction	7.9
Number employed August 1, 1913	855,761
Number employed August 1, 1914	764,827
Reduction	90,934
Per cent reduction	10.8

SUPPLY COMPANIES

78 companies employ normally	251,795
Employed August 1, 1914	153,537
Reduction	98,258
Per cent reduction	39.1
*34 companies employ normally	86,644
Employed in December, 1914	32,266
Reduction	57,378
Per cent reduction	64

24 companies reported reductions in force, in wages or in time without giving figures.
32 companies reported no reduction in force.
2 companies reported increases in force.
28 companies also working part time.

*Including 18 companies that reported both for August 1 and for December.

A detailed statement for the railroads entering Chicago is given in the accompanying table, including five companies that asked that the figures be given without reference to their names. The lines of these companies extend to almost all parts of the country, from the Atlantic to the Pacific and from Minnesota to the Gulf of Mexico, and therefore the condition as to unemployment shown by them may be considered as fairly representative. By applying the percentage of reduction shown as of August 1, 1914, by these roads to the total number of employees reported by the Interstate Commerce Commission for June 30, 1913—1,815,239—it may be conservatively estimated that over 192,000 railroad employees were laid off during the year ending August 1, 1914.

Some of the figures furnished by the railroads require some explanation. Where the figures are given for another date than August 1 it has been indicated in the table.

The Baltimore & Ohio furnished a more complete statement, giving the number of employees in the various departments and for additional dates. From the following table it will be noted that the estimated number of employees for December 31, 1914, was 20,164, or about 33⅓ per cent. less than for June 30, 1913.

NUMBER OF MEN EMPLOYED ON BALTIMORE & OHIO SYSTEM

	Departments							
Date.	General.	Traffic.	M. of W.	M. of E.	Transportation.	Engr.	Miscl.	Total.
June 30, 1913.	988	991	15,460	14,376	27,037	311	1,526	60,689
Aug. 1, 1913.	1,034	1,002	11,707	13,749	26,681	314	2,223	56,710
June 30, 1914.	1,047	992	8,529	13,629	24,729	162	1,401	50,489
Aug. 1, 1914.	1,051	953	10.478	14,876	24,357	244	2,060	54,019
Oct. 31, 1914.	1,054	952	11,037	13,389	25,177	344	2,052	54,005
Nov. 30, 1914.	1,037	945	7,300	12,149	24,000	169	1,902	47,502
Dec. 31, 1914*	1,000	925	5,000	10,000	22,000	100	1,500	40,525

*Estimated.

The Chicago & Alton says in connection with its statement that, while some of the difference between the 1913 and 1914 figures is due to the business depression, a large part of it is accounted for by the fact that in 1913 the company was performing some extraordinary improvement and construction work, the completion of which reduced the forces.

The Chicago, Indianapolis & Louisville also gave the number of employees on November 1, 1914, 3,474, which is 378 less than for August 1, 1914, and 521 less than for June 30, 1913.

The reduction of forces in the railroad supply business is naturally larger in proportion than on the railroads themselves, because the reduction of railway traffic was much smaller than the reduction in business of companies that are almost or entirely dependent upon the railroads and some of which may have no business when the railroads are not buying any more than necessary. Moreover, the figures given showing the reduction in forces by the railroad supply companies are by no means fairly representative of their conditions, because a large number

of them, in addition to laying off men, were also obliged to reduce the working time, and consequently the wages of employees who were retained. Twenty-four companies that gave us no detailed figures showing the number of their employees reported that the number had been reduced from 10 to 50 per cent or that the working time, payroll or capacity had been reduced from 20 to 50 per cent.

Moreover, of the companies that did give figures showing reductions in force, 28 also reported that the employees retained were working part time. One company normally employing 15,500 men had reduced its force on August 1 to 5,700 and in December to 2,800. Another company normally employing 17,841 men had reduced its force to 7,098 on August 1 and on September 12 to 3,329, the weekly payroll having been reduced from $275,000 to $25,000. A car building company normally employing from 1,300 to 1,400 men had reduced the number to 936 on August 1 and in September closed its plant entirely. Two large car companies had each reduced their forces by nine thousand on August 1, 1914.

NUMBER MEN EMPLOYED ON RAILROADS ENTERING CHICAGO

Road	Aug. 1, 1914	Aug. 1, 1913	Reduction	June 30, 1914	June 30, 1913	Reduction.
A. T. & S. F. System	68,240	70,892	2,652	63,684	67,406	3,722
B. & O.	54,019	56,710	2,691	50,489	60,689	10,200
C. & A.	8,552	10,293	1,741	8,116	10,774	2,558
C. & E. I.	...	...	...	7,409	8,208	799
C. & N. W.	46,778	51,847	5,069	45,950	46,484	534
C. G. W.	8,408	8,529	121	8,288	8,301	13
C. I. & L.	3,852	3,877	25	3,588	3,995	407
Chicago Junction	1,286	1,387	101	1,250	1,258	8
C. M. & St. P. (Aug. 31)	57,603	76,674	19,071	61,938	61,898	*40
C. R. I. & P.	41,810	41,089	*721	37,140	36,745	*395
Grand Trunk	38,105	42,581	4,476	37,338	40,787	3,429
N. Y. C. Lines (July)	142,101	170,399	28,298	142,457	167,412	24,955
N. Y. C. & St. L. (July 31)	5,720	7,047	1,327	5,509	7,075	1,566
Pennsylvania Sys. (July 31)	213,203	232,626	19,423	212,202	231,696	19,494
Wabash (Aug. 16)	15,285	16,891	1,606	14,714	16,840	2,126
Five roads that asked that their names be withheld	59,865	64,919	5,054	109,857	110,024	167
Total	764,827	855,761	90,934	809,929	879,492	69,563

*Increase.

THE RAILWAYS AND THE COMMISSION

[From the North American Review]

Here is the key-note of the whole situation. An increase in rates by governmental authority which would help to offset the tremendous loss of $120,000,000 of net operating railway revenues in the year ending June 30, 1914, would do more than any other conceivable thing to make possible the general trading which is essential to renewal of confidence and business activities in the United States. It is not, moreover, a mere matter of stocks and bonds; a far more vital thing even than that is credit. Railway companies cannot obtain money for extensions, betterments, or even maintenance when hovering in the shadow of bankruptcy. And this means that manufacturing concerns, iron makers, steel makers, tie makers, and all of the innumerable others who ordinarily supply the railway companies with all sorts of material are estopped completely from performing their normal functions.

Why? Because higher rates are not really needed? No. That fact has been established beyond question. Because the public objects? No. The public long ago was convinced that the higher costs of living and wages reach to the railway companies no less than to all others. Because the Interstate Commerce Commission cannot or will not perceive the "extraordinary emergency" mentioned by the President as making for a "very real need?" Possibly, to a degree; but clearly the chief obstacle in the way of first steps toward prosperity, in the way of open markets, in the way of the United States government, the Democratic party, and the Democratic President, is Louis Brandeis, counsel and guide of the Interstate Commerce Commission, who solemnly insists that the right to "regulate" rates comprises only the right to "reduce" them. The natural assumption is that if that had been the intent of Congress, Congress would have said so, but Mr. Brandeis holds or at least asserts the contrary view—and the amenably automatic commission obediently acquiesces.

What to do in such a circumstance? Technically the President is helpless, and Congress, too. Government by commission invariably involves abandonment of authority by the chosen representatives of the people. The President does right, therefore, even while making his own opinion known, in keeping within the strict letter of the law and refraining from interference. But even a commission which plumes itself upon being on a plane with the Supreme Court is no greater than the source of its creation; and we say plainly to the patient President that, if this particular body should persist in its present inexcusably dilatory, incomprehensibly stupid, and arrogantly obdurate course, he can do no more popular thing than to ask a willing Congress to legislate it out of existence.

PROGRESS ON THE ALASKA RAILWAY SURVEYS

Since the creation of the Alaskan Engineering Commission about May 1, 1914, considerable progress has been made in the selection of a route to the interior of Alaska. Owing to the shortness of the season in that country, the commission decided immediately on its organization to place as many men in the field as could be employed to advantage. Fourteen locating parties were sent out, twelve of which were given the customary quota of engineers for the running of preliminary lines while one was organized to make special topographical surveys and another to conduct an extensive reconnaissance. Owing to the difficulties of transportation a large pack train was provided for each party, and in some cases boats were furnished for use on the various rivers.

The commission had at its command all the information gathered by previous commissions or furnished by various railroad parties who had considered building into this territory. In some cases this information was in the form of preliminary surveys and estimates, but it usually was in the form of a report on a reconnaissance. As it was not feasible to make careful surveys of all the possible routes from the sea coast to the interior in one season, the attention of the commission was directed especially to the making of a careful preliminary survey of the route from Portage Bay to Fairbanks via Broad Pass with a branch to the Matinuska coal fields, Broad Pass being in the main Alaska range about 256 miles from Portage Bay. A survey was also made from Chitina on the Copper River & Northwestern to the Matinuska coal fields. Two bases of supplies were used, one at Ship Creek, the head of deep water navigation on Cook's Inlet and the other at Fairbanks, the principal interior town. From these points supplies were sent to the different camps by pack trains or boats.

The distance thus outlined covers about 750 miles. It was divided between the several preliminary parties, each taking what it could cover with a good preliminary line during the short season. The first party began work about June 15, and the last early in July. Their season's work was completed at various dates between September 15 and November 5. In this manner a very good preliminary line was run and careful topography was taken for a considerable distance on each side. Maps were made on a working scale and a location projected for the purpose of getting an estimate of the cost.

In addition to the surveys between Portage Bay and Fairbanks, and to the Matinuska coal fields, a careful survey was also made of the existing line of the Alaska Northern extending north from Seward for 72 miles. Data were also gathered for a line from mile 39 of the Copper River & Northwestern to the Bering river coal fields via Lake Charlotte, while a reconnaissance was made for several hundred miles through the Susitna and Kuskokwim valleys. The members of the commission also made various careful examinations of several other proposed railroad termini, including Valdez, Cordova, Katalla and Controller Bay, and gathered a great deal of information regarding other feasible routes from the seaboard into the interior.

The field parties have now been disbanded and a small force of office men are employed in condensing the data for a report

WHY A RAILROAD SHOULD PAY A DIVIDEND*

BY IVY L. LEE
Executive Assistant, Pennsylvania Railroad Company

At the recent hearing before the Interstate Commerce Commission in the rate advance case, when Daniel Willard, president of the Baltimore & Ohio, was on the stand, Mr. Brandeis said:

"You have defended here today a reduction of practically everything that has to do with this railroad. You are putting off expenditures and necessarily, in the course of that, discharging employees. And the only thing that is maintained at its standard is the dividend."

To suggest the cutting or passing of dividends as a preliminary step in railroad economy is to strike at the very roots of our present business processes. The pride of the Pennsylvania Railroad is that since the company began to operate trains nearly seventy years ago it has always paid a cash dividend. The shareholders of this company have paid into it a total of about $540,000,000; and the outstanding capital stock is $499,265,700. This means that there is no "water."

On its stock the company has since the beginning paid an average dividend of 6.1 per cent. The policy has been to pay a reasonable dividend and to make that dividend secure. What was left over after interest and dividends went back to the public in improved service, in facilities which did not add to earnings.

All the money received by the railroad company goes back to the public. Out of some $381,000,000 received last year by the Pennsylvania System from all sources, all but $10,-417,531 was paid out for wages, materials, taxes, bond interest and dividends. In other words, less than three cents out of each dollar received was at the year's end available for extraordinary expenses, and to protect the company's credit against the future.

During the past 17 years the Pennsylvania Railroad System has paid out in wages $1,932,626,384. It has paid to its stockholders in dividends less than one-fourth as much—$434,613,302—and it has paid a dividend to the public in the form of non-income adding improvements which cost $366,372,902.

The policy of the Pennsylvania Railroad from the beginning has been to maintain such a standard of credit and financial stability that in times of stress investors could look to Pennsylvania stock as a sure fortress.

The purpose of a railroad is to give good service at fair rates and to earn a dividend on its capital. The owners of a railroad are primarily concerned with the earnings as a whole. The details of charges and service they are anxious to have adjusted to promote the convenience and the prosperity of the community.

If it were not for the capital invested there would be no Pennsylvania Railroad. Society considers it important to pay interest on savings bank deposits; but a larger part of such deposits earn their interest through investments in railroad securities. Why then propose to penalize the man who invests direct instead of through the medium of the savings bank or the insurance company?

Society commends the man who saves money, buys a house and thus avoids paying rent. But what about the man who saves money and buys railroad stock, depending upon his dividends with which to pay his house rent?

The dividend—the payment for all capital—is a sort of back-salary to those who have denied themselves the immediate benefit of earnings in order to assure themselves future benefits. They invest their savings. The fact that there are some large fortunes which do not imply such self-denial does not invalidate the great fact that the vast amount of money invested in railroad property in this country is from the savings of the people.

The insurance companies alone have over $1,500,000,000 invested in railroad securities, and the savings banks upward of $800,000,000. There are 30,000,000 insurance policy holders and 10,000,000 savings banks depositors in this country. Here then are 40,000,000 separate accounts which have indirectly invested about $2,500,000,000 in railroad bonds.

This takes no account of upward of $4,000,000,000 in American railroad securities held in Europe; it takes no account of that vast number of our own people who have directly invested their money in railroad securities. Restrict them to a small return on their money when times are prosperous; deny them a fair return when times are bad, and the railroads of this country will palsy and shrivel.

To insure a fair dividend to the railroad investor is the concern and the obligations of the public, which wants good service; it is the profound duty of the employee.

The Pennsylvania Railroad System paid to its 250,000 employees last year $189,000,000 in wages. This was at a rate of wages 35 per cent higher than in 1900. In other words, had the 1900 rate of wages been paid in 1913 the total payments would have been only $125,000,000. Total wage payments in 1900 were about $71,000,000, so that the increased rate of payment for 1913 was actually more than the total wage payment of 1900.

The Pennsylvania Railroad paid to its 90,000 shareholders last year about $29,000,000 in dividends, and the annual rate of dividend was precisely what it was in 1900.

Wages to employees were 35 per cent higher, but holders of Pennsylvania Railroad stock enjoyed no higher wages for the use of their money than they did 14 years ago. Many stockholders bought their shares at a substantial premium above par, and many paid into the company $120 for $100 par value of stock. And for holders of Pennsylvania stock the price of living has gone up exactly as for the men in the shops or on the road.

The wage-earner has a very great incentive to protect the Pennsylvania dividend. The Pennsylvania Railroad has always paid the highest rates of wages in the territory through which it moves, and employees of other railroads have sought to get their wages adapted to the Pennsylvania standard.

The safety of the Pennsylvania's dividend must be secured if the company is to enjoy the confidence and support of those to whom the public must look to obtain money to supply future needs. Ninety thousand people, among whom there are nearly 45,000 women, have had such faith in the fact that the management and the employees would protect the integrity of that dividend that they have invested in our stock. More persons have intrusted their money to the officers and employees of this company, to enable the Pennsylvania Railroad to pay the wages it does and give the service it does, than to any other railroad in the world.

This company is not owned by a few capitalists. Some 20,000 persons own less than 10 shares each of our stock. All the directors and all the employees together own less than 5 per cent of the total capital. In the very highest sense of the word, our officers and employees are trustees. If, then, we are to keep faith with these people, located as they are in all parts of the world, must we not feel that every employee of this company when he enters its service undertakes an implied contract that in so far as in his power lies he will neglect no opportunity to see to it that dividend is earned and paid?

*From an address at meeting of the Media Division, Veterans' Association of Pennsylvania Railroad Employees at West Chester, Pa., November 19, 1914.

RAILWAY CROSSINGS IN ZURICH TO BE ELIMINATED.—The managing directors of the Swiss Federal railways and the Municipal Council of Zurich have finally entered into an agreement for the reconstruction by the former of the Zurich Sea Left Bank Railway, within the city limits of Zurich.

General News Department

The Commercial Club of Puyallup, Wash., has adopted resolutions urging the repeal of the full crew law passed by the state legislature in 1911.

The large roundhouse of the Duluth, Winnipeg & Pacific at Duluth, Minn., was destroyed by fire December 25. Several locomotives were damaged.

R. H. Aishton, vice-president of the Chicago & North Western has been named by President Wilson as a member of the Industrial Relations Commission. The appointment is to fill the vacancy caused by the resignation, some time ago, of F. A. Delano, who became a member of the Federal Reserve Board.

The annual meeting of the Western Society of Engineers, Chicago, will be held on January 13 and 14, 1915. The annual banquet will be given at the Auditorium hotel on Wednesday evening, January 13. The following day will be devoted to an inspection of important engineering work in the vicinity of Chicago by special train. That evening a smoker will be held at the society's rooms with moving pictures of the San Diego and San Francisco expositions.

In response to a request from a committee of the city council for a conference regarding the beginning of work on the new Union station in Chicago, the officers of the company have announced that a meeting of the directors will be held in Chicago on January 12, to consider the entire construction program. The council committee desires to persuade the railroads to begin work at once on the terminal improvements in Chicago in order to give employment to a large number of men.

F. A. Spink, traffic manager of the Chicago & Western Indiana and the Belt Railway of Chicago, has been elected chairman, and Frank T. Eyman, assistant freight traffic manager of the Chicago & North Western, vice chairman, of the Railroad Subdivision of the Chicago Association of Commerce for the ensuing year. The other members of the committee are James Webster, assistant freight traffic manager of the New York Central Lines West of Buffalo; A. C. Ridgway, second vice-president of the Chicago, Rock Island & Pacific, and J. C. Clair, industrial commissioner of the Illinois Central.

Ralph Peters, president of the Long Island Railroad, continuing a custom of several years' standing, held informal receptions to employees of the road at three of the principal terminals on Wednesday and Thursday, the two days preceding Christmas. He shook hands with ten or fifteen hundred men, calling a large portion of them by name. Outsiders who were present remarked that there was "none of the artificial and forced atmosphere often observed on such occasions." Those who attended received the special attention of Don Hudnell, who has been messenger and clerk for four successive presidents of the road, and from him each man received a cigar, while each woman employee received a box of candy.

On Wednesday, December 23, an inspection of the railroad Y. M. C. A. buildings in the vicinity of Chicago was made by the Railroad Department Committee, including H. G. Hetzler, president of the Chicago & Western Indiana, general chairman; A. M. Schoyer, vice-president, Pennsylvania lines; Robert Quayle, general superintendent, motive power and car department, Chicago & North Western; W. J. Jackson, receiver and general manager, Chicago & Eastern Illinois, and other officers of the roads interested. The party traveled by special train, visiting the building at the Chicago & Eastern Illinois yard at Dolton, the Chicago & North Western building at Fortieth avenue, Chicago, the Dearborn station department of the Chicago & Western Indiana, the Grand Trunk department at Fifty-first street, the Fifty-ninth street department of the Pennsylvania and the Glenn Yards department of the Chicago & Alton.

Colonel Jose Rodriguez, general manager of the National Railways of Mexico, says that a large order for fuel oil has been given to the Waters-Pierce Oil Company. This oil is being obtained from the United States, and many carloads have already entered the country through El Paso en route to distributing points in Mexico. The cutting off of the supply of crude oil from the Tampico fields made it necessary to buy in the United States. Announcement is also made by Colonel Rodriguez that arrangements have been made with American concerns to supply large quantities of timber, iron, steel and other materials for the construction of cars in the shops at Aguas Calientes. These shops were recently reopened and are now running to their full capacity, giving employment to about 4,500 men. Employment is now being given to several thusand men in the building of new bridges, relaying track and general rehabilitation work upon different divisions of the system.

Parcel Post News

[From the New York World]

Representative George J. Kindel, of Colorado [a former railroad man] . . . has been in New York looking into the operation here of the parcel post. He declares that he has "new proof of the petty larceny of the system."

"New York people," he said, "are paying $1,000,000 a year more for service by parcel post than they would for the same service by express. For distances of from 50 to 150 miles the parcel post beats express, and for uninsured 5-pound packages up to 600 miles. But beyond that it's very different.

"Between New York and Boston the parcel post rate on 20 pounds is 44 cents. Post Office officials say they pay the railroads 33 cents for this haul, but the express company will pick up the package, insure it for $50 and deliver it at the other end, all for 36 cents. . . . Parcel post rates meet express rates on 5-pound packages in the 300-mile zone; they practically meet them on 10-pound packages in the 150-mile zone, and they do meet them on 20-pound and 50-pound packages in the zone. When you get to the 1,000-mile zone—New York to Chicago for instance—the insured rates by express and parcel post are, respectively, as follows: 5 pounds, 31 and 42 cents; 10 pounds, 42 and 72 cents; 20 pounds, 64 cents and $1.32.

"Now here comes the thing that angers me. The new express and parcel post rates, which went into effect February 1 last, were fixed by the Interstate Commerce Commission, which said to the express companies: 'You must put in these rates,' and to the Post Office Department, 'you may put in these rates.' We are paying $2,000,000 for the Interstate Commerce Commission, and that is the kind of service we are getting. . . ."

While in New York Mr. Kindel got the figures of the parcel post traffic here for the two weeks ending October 15. To all zones, 8,994,175 packages weighing 9,491,747 pounds were carried in that time, the postage paid being $521,361.54. By zones this business was distributed as follows:

First (50 miles), 811,180 packages, postage, $38,410.57; second (150 miles), 1,125,529 packages, $48,609.21; third (300 miles), 1,262,918 packages, $54,846.03; fourth (600 miles), 1,173,216 packages, $62,675.28; fifth (1,000 miles), 1,411,718 packages, $74,035.48; sixth (1,400 miles), 1,243,944 packages, $69,275.07; seventh (1,800 miles), 770,929 packages, $72,919.77; eighth (over 1,800 miles), 773,129 packages, $83,375.72.

"You will notice from these figures," Mr. Kindel said, "that the average weight of the packages was less than one ounce over one pound. The people are chiefly sending by the 'new' parcel post the things they sent by the 'old.' The great glory of the parcel post, you know, was to be its effect on the cost of living. You are not going to reduce the cost of living by packages that weigh a pound each.

"In the local, first and second zones the number of packages weighing above twenty-one pounds sent from New York in two weeks was 4,940; their weight was 141,482 pounds, and the postage paid on them was $1,378.99. The bulk was just one-sixtieth of the total.

"A mail order house will ship 100 pounds by express to Des Moines, for example, break the package up there into five twenty-

pound parcels and reship by post. They will save $5 per 100 pounds on the all-parcel-post rate by doing it.

"Let me give you one other illustration of our system. Lord & Taylor have houses in both this country and Germany. The rate on their 11-pound parcels from Germany to Cuba is 50 cents; to Mexico, 55 cents. . . . From Germany they can post 11 pounds to San Francisco for 81 cents; from New York the rate is $1.32.

"What I want to do about all this is to have the weight limit increased, first of all, to 100 pounds. Then I want the rates revised."

MEETINGS AND CONVENTIONS

The following list gives names of secretaries, dates of next or regular meetings, and places of meeting.

AIR BRAKE ASSOCIATION.—F. M. Nellis, 53 State St., Boston, Mass. Next convention, May 4-7, 1915, Hotel Sherman, Chicago.

AMERICAN ASSOCIATION OF DEMURRAGE OFFICERS.—A. G. Thomason, Demurrage Commissioner, Boston, Mass. Annual convention, April, 1915, Richmond, Va.

AMERICAN ASSOCIATION OF DINING CAR SUPERINTENDENTS.—H. C. Boardman, D., L. & W., Hoboken, N. J. Next meeting, October, 1915.

AMERICAN ASSOCIATION OF FREIGHT AGENTS.—R. O. Wells, Illinois Central, East St. Louis, Ill. Annual meeting, May 21-24, 1915, Richmond, Va.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J., 143 Liberty St., New York.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—E. H. Harman, Room 101, Union Station, St. Louis, Mo. Next meeting, May 20-21, 1915, San Francisco, Cal.

AMERICAN ELECTRIC RAILWAY ASSOCIATION.—E. B. Burritt, 20 W. 39th St., New York. Annual convention, October, 1915, San Francisco, Cal.

AMERICAN ELECTRIC RAILWAY MANUFACTURERS' ASSOCIATION.—H. C. McConnaughy, 165 Broadway, New York. Meetings with American Electric Railway Association.

AMERICAN RAILROAD MASTER TINNERS, COPPERSMITHS AND PIPEFITTERS' ASSOCIATION.—W. E. Jones, C. & N. W., 3814 Fulton St., Chicago. Annual meeting, Chicago.

AMERICAN RAILWAY ASSOCIATION.—W. F. Allen, 75 Church St., New York. Next session, May 19, 1915, Atlantic City, N. J.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, C. & N. W., Chicago. Next convention, October 19-21, 1915, Detroit, Mich.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—E. H. Fritch, 900 S. Michigan Ave., Chicago. Next convention, March 16-18, 1915, Chicago.

AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION.—J. W. Taylor, 1112 Karpen Bldg., Chicago. Annual meeting, June 9-11, 1915, Atlantic City, N. J.

AMERICAN RAILWAY SAFETY ASSOCIATION.—L. F. Shedd, C. R. I. & P., Chicago.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—Owen D. Kinsey, Illinois Central, Chicago. Annual meeting, July, 1915.

AMERICAN SOCIETY FOR TESTING MATERIALS.—Prof. E. Marburg, University of Pennsylvania, Philadelphia, Pa.

AMERICAN SOCIETY OF CIVIL ENGINEERS.—Chas. W. Hunt, 220 W. 57th St., New York, Regular meetings, 1st and 3d Wednesday in month, except June, July and August, 220 W. 57th St., New York.

AMERICAN SOCIETY OF ENGINEERING CONTRACTORS.—J. R. Wemlinger, 11 Broadway, New York. Regular meetings, 2d Thursday in month, at 2 P. M., 11 Broadway, New York.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—Calvin W. Rice, 29 W. 39th St., New York.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—F. J. Angier, B. & O., Mt. Royal Sta., Baltimore, Md. Next convention, January 19-21, 1915, Chicago.

ASSOCIATION OF AMERICAN RAILWAY ACCOUNTING OFFICERS.—E. R. Woodson, 1300 Pennsylvania Ave., N. W., Washington, D. C. Annual convention, April 28, 1915, Atlanta, Ga.

ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS.—George W. Lyndon, 1214 McCormick Bldg., Chicago.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—C. W. Egan, B. & O., Baltimore, Md. Annual meeting, third week in May, 1915, Galveston, Tex.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W., Room 411, C. & N. W. Sta., Chicago. Annual meeting, October, 1915.

ASSOCIATION OF RAILWAY TELEGRAPH SUPERINTENDENTS.—P. W. Drew, Soo Line, 112 West Adams St., Chicago. Annual meeting, June 22-25, 1915, Rochester, N. Y.

ASSOCIATION OF TRANSPORTATION AND CAR ACCOUNTING OFFICERS.—G. P. Conard, 75 Church St., New York.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—L. D. Mitchell, Detroit Graphite Co., Chicago, Ill. Meetings with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—James Powell, Grand Trunk, P. O. Box 7, St. Lambert (near Montreal), Que. Regular meetings, 2d Tuesday in month, except June, July and August, Windsor Hotel, Montreal, Que.

CANADIAN SOCIETY OF CIVIL ENGINEERS.—Clement H. McLeod, 176 Mansfield St., Montreal, Que. Regular meetings, 1st Thursday in October, November, December, February, March and April. Annual meeting, January, Montreal.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Aaron Kline, 841 Lawler Ave., Chicago. Regular meetings, 2d Monday in month, except July and August, Lytton Bldg., Chicago.

CENTRAL RAILWAY CLUB.—H. D. Vought, 95 Liberty St., New York. Regular meetings, 2d Friday in January, May, September and November. Annual meeting, 2d Thursday in March, Hotel Statler, Buffalo, N. Y.

ENGINEERS' SOCIETY OF WESTERN PENNSYLVANIA.—Elmer K. Hiles, 2511 Oliver Bldg., Pittsburgh, Pa. Regular meetings, 1st and 3d Tuesday, Pittsburgh.

FREIGHT CLAIM ASSOCIATION.—Warren P. Taylor, R. F. & P., Richmond, Va. Annual meeting, June 16, 1915, Chicago.

GENERAL SUPERINTENDENTS' ASSOCIATION OF CHICAGO.—A. M. Hunter, 321 Grand Central Station, Chicago. Regular meetings, Wednesday, preceding 3d Thursday in month, Room 1856, Transportation Bldg., Chicago.

INTERNATIONAL RAILWAY CONGRESS.—Executive Committee, 11, Rue de Louvain, Brussels, Belgium. Next convention, June 23 to July 6, 1915, Berlin.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—C. G. Hall, C. & E. I., 922 McCormick Bldg., Chicago. Annual meeting, May 17-20, 1915, Chicago.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—Wm. Hall, 829 W. Broadway, Winona, Minn. Next convention, July 14-17, 1915, Sherman House, Chicago.

INTERNATIONAL RAILROAD MASTER BLACKSMITHS' ASSOCIATION.—A. L. Woodworth, C. H. & D., Lima, Ohio. Annual meeting, August 17, 1915, Philadelphia, Pa.

MAINTENANCE OF WAY AND MASTER PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—T. I. Goodwin, C. R. I & P., Eldon, Mo.

MASTER BOILER MAKERS' ASSOCIATION.—Harry D. Vought, 95 Liberty St., New York. Annual convention, May 26 to 28, 1915, Chicago, Ill.

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA.—A. P. Dane, B. & M., Reading, Mass. Next convention, September 14-17, 1915, Detroit, Mich.

MASTER CAR BUILDERS' ASSOCIATION.—J. W. Taylor, 1112 Karpen Bldg., Chicago. Annual meeting, June 14-16, 1915, Atlantic City, N. J.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—Bruce V. Crandall, 537 So. Dearborn St., Chicago. Next convention, March 15-19, 1915, Chicago.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, 2d Tuesday in month, except June, July, August and September, Boston.

NEW YORK RAILROAD CLUB.—Harry D. Vought, 95 Liberty St., New York. Regular meetings, 3d Friday in month, except June, July and August, 29 W. 39th St., New York.

NIAGARA FRONTIER CAR MEN'S ASSOCIATION.—E. Frankenberger, 623 Brisbane Bldg., Buffalo, N. Y. Meetings monthly.

PEORIA ASSOCIATION OF RAILROAD OFFICERS.—M. W. Rotchford, Union Station, Peoria, Ill. Regular meetings, 2d Thursday in month, Jefferson Hotel, Peoria.

RAILROAD CLUB OF KANSAS CITY.—C. Manlove, 1008 Walnut St., Kansas City, Mo. Regular meetings, 3d Friday in month, Kansas City.

RAILROAD MASTER TINNERS, COPPERSMITHS AND PIPEFITTERS' ASSOCIATION.—U. G. Thompson, C. & E. I., Danville, Ill. Annual meeting, May, 1915.

RAILWAY BUSINESS ASSOCIATION.—Frank W. Noxon, 30 Church St., New York.

RAILWAY CLUB OF PITTSBURGH.—J. B. Anderson, Room 207, P. R. R. Sta., Pittsburgh, Pa. Regular meetings, 4th Friday in month, except June, July and August, Monongahela House, Pittsburgh.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. Scribner, 1021 Monadnock Block, Chicago. Meetings with Association of Railway Electrical Engineers.

RAILWAY FIRE PROTECTION ASSOCIATION.—C. B. Edwards, Fire Ins. Agt., Mobile & Ohio, Mobile, Ala. Next meeting, October, 1915.

RAILWAY SIGNAL ASSOCIATION.—C. C. Rosenberg, Times Bldg., Bethlehem, Pa. Next meeting, March 15, 1915, Chicago. Annual meeting, September 21-24, 1915, Salt Lake City, Utah.

RAILWAY STOREKEEPERS' ASSOCIATION.—J. P. Murphy, L. S. & M. S., Box C, Collinwood, Ohio. Annual meeting, May 17-19, 1915, Hotel Sherman, Chicago.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 2136 Oliver Bldg., Pittsburgh, Pa. Meetings with Master Car Builders and Master Mechanics' Associations.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, 50 Church St., New York. Meetings with Association of Railway Telegraph Superintendents.

RICHMOND RAILROAD CLUB.—F. O. Robinson, C. & O., Richmond, Va. Regular meetings, 2d Monday in month, except June, July and August.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—L. C. Ryan, C. & N. W., Sterling, Ill. Annual meeting, September 14-16, 1915. Chicago.

ST. LOUIS RAILWAY CLUB.—B. W. Frauenthal, Union Station, St. Louis, Mo. Regular meetings, 2d Friday in month, except June, July and August, St. Louis.

SALT LAKE TRANSPORTATION CLUB.—R. E. Rowland, Hotel Utah Bldg., Salt Lake City, Utah. Regular meetings, 1st Saturday of each month, Salt Lake City.

SIGNAL APPLIANCE ASSOCIATION.—F. W. Edmunds, 3868 Park Ave., New York. Meeting with annual convention Railway Signal Association.

SOCIETY OF RAILWAY FINANCIAL OFFICERS.—Carl Nyquist, C. R. I. & P., La Salle St. Sta., Chicago. Annual meeting, September, 1915.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—E. W. Sandwich, A. & W. P. R. R., Atlanta, Ga. Next regular meeting, January 21, 1915, Atlanta, Ga.

SOUTHERN & SOUTHWESTERN RAILWAY CLUB.—A. J. Merrill, Grant Bldg., Atlanta, Ga. Regular meetings, 3d Thursday, January, March, May, July, September, November, 10 A. M., Candler Bldg., Atlanta.

TOLEDO TRANSPORTATION CLUB.—Harry S. Fox, Toledo, Ohio. Regular meetings, 1st Saturday in month, Boody House, Toledo.

TRACK SUPPLY ASSOCIATION.—W. C. Kidd, Ramapo Iron Works, Hillburn, N. Y. Meetings with Roadmasters' and Maintenance of Way Association.

TRAFFIC CLUB OF CHICAGO.—W. H. Wharton, La Salle Hotel, Chicago.

TRAFFIC CLUB OF NEWARK.—John J. Kautzmann, P. O. Box 238, Newark, N. J. Regular meetings, 1st Monday in month, except July and August, The Washington, Newark.

TRAFFIC CLUB OF NEW YORK.—C. A. Swope, 291 Broadway, New York. Regular meetings last Tuesday in month, except June, July and August, Waldorf-Astoria, New York.

TRAFFIC CLUB OF PITTSBURGH.—D. L. Wells, Erie R. R., Pittsburgh, Pa. Meetings bimonthly, Pittsburgh. Annual meeting, 2d Monday in June.

TRAFFIC CLUB OF ST. LOUIS.—A. F. Versen, Mercantile Library Bldg., St. Louis, Mo. Annual meeting in November. Noonday meetings October to May.

TRAIN DESPATCHERS' ASSOCIATION OF AMERICA.—J. F. Mackie, 7122 Stewart Ave., Chicago. Annual meeting June 15, 1915, Minneapolis, Minn.

TRANSPORTATION CLUB OF DETROIT.—W. R. Hurley, Superintendent's office, L. S. & M. S., Detroit, Mich. Meetings monthly, Normandie Hotel, Detroit.

TRAVELING ENGINEERS' ASSOCIATION.—W. O. Thompson, N. Y. C. & H. R., East Buffalo, N. Y. Annual meeting, September, 1915. Chicago.

WESTERN CANADA RAILWAY CLUB.—W. H. Rosevear, P. O. Box 1707, Winnipeg, Man. Regular meetings, 2d Monday, except June, July and August, Winnipeg.

WESTERN RAILWAY CLUB.—J. W. Taylor, 1112 Karpen Bldg., Chicago. Regular meetings, 3d Tuesday in month, except June, July and August, Karpen Bldg., Chicago.

WESTERN SOCIETY OF ENGINEERS.—J. H. Warder, 1735 Monadnock Block, Chicago. Regular meetings, 1st Monday in month, except January, July and August, Chicago. Extra meetings, except in July and August, generally on other Monday evenings.

Traffic News

In Cleveland it is reported that the Pennsylvania and the New York Central have announced that free delivery of passenger tickets to residences and offices will be much curtailed. The delivery service in Cleveland has cost each of these roads, it is said, about $100 a month.

A press despatch from San Francisco says that the three lines of steamships running between that port and the Atlantic coast through the Panama canal have agreed on an increase in the rates of transportation on iron and steel goods and certain other commodities.

The American steamship "Pathfinder" left Galveston December 25 for Bremen, with a cargo of cotton, 6,650 bales, the first cotton to go to Germany since the beginning of the war. The freight rate on this cotton, $3 per 100 lb. is said to be the highest ever paid at the port of Galveston. A year ago the current rate was about 35 cents per 100 lb.

The Pennsylvania Railroad reports that the parcel post packages sent out in the mail cars of that road from New York and from Philadelphia in the seven days ending with December 24, numbered about nine millions. The Christmas rush was about 50 per cent heavier than a year ago. Three times the regular force of men to handle the mails had to be kept on duty at stations.

On Wednesday, December 30, the Delaware, Lacakawanna & Western took out of Hoboken a special train of 12 cars destined for Los Angeles over the Atchison, Topeka & Santa Fe, carrying seven companies of motion picture actors, going out to begin their winter season. The train consisted of five sleeping cars, a dining car, a buffet car, a parlor car and four baggage cars.

Nine representatives of the passenger department of railroads operating in Indiana called on Governor Ralston and members of the Indiana Public Service Commission on December 21, to discuss the proposal to repeal the two-cent fare law and establish a rate of 2½ cents a mile in its place. The railroad men pointed out that the Interstate Commerce Commission had recognized the need for a higher rate of passenger fares and had allowed advances in the interstate rates, but that similar changes could not be made in the intrastate fares without a change in the state law. Neither the governor nor the members of the commission would commit themselves as to their attitude. The railroad men said they were preparing to make a direct and public appeal to the assembly of Indiana for the repeal of the present two-cent fare law and the enactment of a new law authorizing a fare of 2½ cents a mile. The rate charged prior to the enactment of the present law was 3 cents a mile. Representatives of the railroads in Ohio also held a conference with the state public utilities commission on December 22, and asked the commission to recommend the repeal of the two-cent fare law and the substitution of a law providing for a 2½-cent rate.

Increased Use of the Multiplication Table

Scales of rates to be used in making the general increase of 5 per cent in freight rates recently ordered, have been submitted to the commission by C. C. McCain, charmain of the Trunk Line Association committee. The first class rate between New York and Chicago will be 78.8 cents per 100 lb., and the other five classes will be graded proportionately. To points intermediate between New York and Chicago, taking 71 per cent and higher of the New York-Chicago class rates, the new tariffs will become effective on January 15, and to points taking a lower percentage of the rates they will become effective February 1.

From New York to points taking 60 per cent of the Chicago rate, the charges on the various classes will be as follows: First class, 47.3 cents; second, 41 cents; third, 31.5 cents; fourth, 22.1 cents; fifth, 18.9 cents, and sixth, 15.8 cents.

Commission and Court News

INTERSTATE COMMERCE COMMISSION

The commission has suspended from January 1 to May 1, 1915, certain tariffs of the Baltimore & Ohio, the Central of New Jersey, the Delaware, Lackawanna & Western, the Erie, the Lehigh Valley, the New York Central & Hudson River, the New York, Ontario & Western, the Pennsylvania and the West Shore, containing increased charges for the handling of freight by lighter and float from and to points in New York harbor, both within and outside free lighterage limits.

Rates on Grapes to Points in Montana and Wyoming

Lindsay & Company et al. v. Northern Pacific et al. Opinion by Commissioner Clements:

The commission finds that the rates on grapes from producing points in New York, Pennsylvania, Michigan, Iowa, Missouri and Kansas to points in Montana and Wyoming are not unreasonable. Complaint dismissed. (32 I. C. C., 287.)

Gravel and Sand Switching Charges at Chicago

Opinion by Commissioner Clements:

The commission finds that a proposed cancellation of absorption of switching charges on sand and gravel from Janesville, Beloit and other Wisconsin points to Chicago and from these points and also from Carpentersville, Algonquin and Elgin to certain points in Indiana within the Chicago switching district is justified. (32 I. C. C., 291.)

Joint Rates Between Rail and Water Lines

Eastern Shore Development Steamship Company v. Baltimore & Ohio et al. Opinion by Commissioner Meyer:

The commission finds that the refusal of the Baltimore & Ohio to establish through routes and joint rates in conjunction with the complainant, a water line, between landings on Chesapeake Bay and its tributary waters on the one hand and points on the Baltimore & Ohio and its connections on the other is unreasonable and discriminatory. (32 I. C. C., 238.)

Rates on Potatoes and Onions From St. Matthews, Ky.

St. Matthews Produce Exchange v. Louisville & Nashville et al. Opinion by Commissioner McChord:

The commission finds that the rates on potatoes and onions from St. Matthews, Ky., and other stations to Cincinnati, Ohio, and via that point to central freight association territory are not unreasonable or discriminatory as compared with the rates from Louisville. Certain local rates from St. Matthews and other stations, however, when used in connection with interstate shipments of potatoes and onions via Louisville, Ky., are found unreasonable. (32 I. C. C., 233.)

Rates on Cement From Ada, Okla.

Oklahoma Portland Cement Company v. Arkansas, Louisiana & Gulf et al. Opinion by Commissioner McChord:

In a complaint dealing with cement rates from Ada, Okla., to all points in Louisiana west of the Mississippi, southern Arkansas and certain destinations in eastern Texas, the commission finds that Ada should be put on a 3-cent differential under the Kansas gas belt rates to the Arkansas destination points and a 2-cent differential under the Kansas gas belt rates to the Louisiana and Texas points. The St. Louis, Iron Mountain & Southern is required to establish through routes from Ada to the destination points to which it operates through routes from the Kansas gas belt. (32 I. C. C., 221.)

STATE COMMISSIONS

The Alabama Railroad Commission has approved a proposed increase in freight rates on the railroads of that state, averaging 10 per cent.

The New Hampshire Public Service Commission has approved tariffs filed by the Boston & Maine, advancing passenger fares in that state on January 1 to the basis of 2½ cents a mile. Similar tariffs filed by the B. & M. in Massachusetts have been suspended by the Public Service Commission of that state until February 1.

John P. Dohoney, investigator of accidents for the Pennsylvania Public Service Commission, in his annual report, which covers eleven months ending June 30, 1914, says that on the railroads of the state 15 passengers, 328 employees, 555 trespassers and 93 other persons were killed during the year and a total of 9,199 persons were injured. The street railways reported 170 persons killed and 2,991 injured, 19 of the killed being passengers. Of persons who were killed while under the influence of intoxicating liquor the railroads report 24, and the street railways 9, all of these being, apparently, trespassers. The public grade crossings in the state of Pennsylvania number about 10,000, and in the six months ending June 30, 15 people were killed and 34 injured at crossings which are classed as protected; that is to say, they were equipped with gates, or bells, or both, or were attended by watchmen.

PERSONNEL OF COMMISSIONS

Henry Clay Hall of Colorado has been nominated by the President to succeed himself as a member of the Interstate Commerce Commission.

The governor of Pennsylvania has appointed Walter H. Gaither, of Pittsburgh, a member of the Public Service Commission of the state, filling a vacancy. Mr. Gaither was for a number of years a newspaper reporter in Pittsburgh. The governor has designated ex-Governor Samuel W. Pennypacker as chairman of the commission.

Richard Sachse has been appointed chief engineer of the California Railroad Commission. Mr. Sachse has been acting chief engineer of the commission since December 1, 1913. He is a graduate of the Royal Technical Institute of Dresden, Germany. After completing the course in civil and structural engineering, Mr. Sachse was secretary to the chief engineer of the Joint Government Board of Germany, France and Great Britain on preliminary railroad location investigations in West Africa. In 1903 he came to the United States and did engineering work in Chicago, Milwaukee and other places. During 1906 and 1907. he was assistant engineer in the United States Reclamation Service, and thereafter he was connected successively with the land department of the Southern Pacific and the construction department of the Western Pacific. In December, 1911, he began work for the California Railroad Commission as assistant engineer and was later appointed to the position of principal assistant engineer in direct charge of valuation work.

COURT NEWS

The Chicago Association of Commerce, the Illinois Central and the Morton Salt Company have filed in the Federal Court at Chicago an appeal from a recent decision of the Interstate Commerce Commission, ordering that salt rates from the Michigan fields to points in Illinois shall not exceed, by more than 2½ cents per 100 lb., the rates from Chicago and Chicago rate points to the same destination. The ground given for the objection is that the decision deprives Chicago of the advantage which it has heretofore had by reason of cheap lake transportation.

EGYPTIAN RAILWAY AFFAIRS.—The military authorities of Egypt find the facilities afforded by the Egyption State Railways workshop at Boulac, Cairo, very useful. Among other things they have recently placed an order for the manufacture in them of 2,000 camp bedsteads for the use of troops.

Railway Officers

Executive, Financial, Legal and Accounting

W. P. Briggs has been appointed general attorney of the Pacific & Idaho Northern, with headquarters at New Meadows, Idaho.

H. D. Davis has been appointed contract attorney for the Missouri Pacific and the St. Louis, Iron Mountain & Southern, with headquarters at St. Louis, Mo.

A. T. Hardin, vice-president of the New York Central & Hudson River at New York, has been appointed vice-president in charge of the operating department, embracing transportation, construction, roadway and equipment, with headquarters at New York, of the New York Central Railroad, which is the name of the new company which has taken over the New York Central & Hudson River and the Lake Shore & Michigan Southern. J. J. Bernet, vice-president of the Lake Shore & Michigan Southern, at Chicago, has been appointed resident vice-president of the New York Central Railroad, with headquarters at Chicago, and will act as the general representative of the company in that territory and perform such other duties as may be assigned to him.

Operating

Henry Miller has resigned as general manager of the Wabash, effective January 1, but will continue as a director and vice-president of the company.

J. W. Leonard, assistant to vice-president of the Canadian Pacific at Montreal, Que., will leave that company on January 1 to assume the general management of the Toronto Terminals Railway at Toronto, Ont.

O. H. Hobbs, superintendent of the Baltimore division of the Baltimore & Ohio at Baltimore, Md., has been transferred to Parkersburg, W. Va., as superintendent, succeeding C. E. Bryan, transferred. M. H. Cahill, superintendent of the New Castle division at New Castle, Pa., has been appointed superintendent of the Baltimore division, succeeding Mr. Hobbs. J. W. Kelly, Jr., superintendent of the Cumberland division at Cumberland, Md., succeeds Mr. Cahill, and C. L. French, assistant general superintendent at Pittsburgh, Pa., has been appointed superintendent of the Cumberland division, succeeding Mr. Kelly, and the position of assistant general superintendent at Pittsburgh has been abolished. S. A. Jordan, superintendent at Winchester, Va., has been appointed assistant superintendent of the Baltimore division, with headquarters at Brunswick, Md., and H. F. Howser, road foreman of engines at Brunswick, Md., has been appointed road foreman of engines and assistant trainmaster of the Shenandoah district, with office at Harrisonburg, Va.

Traffic

A. A. Heard, general passenger agent of the Delaware & Hudson at Albany, N. Y., has resigned, effective January 1.

Drew Head has been appointed assistant general freight agent of the Gulf, Colorado & Santa Fe, with headquarters at Galveston, Tex.

Myron Wood, general agent of the Pittsburgh & Lake Erie at Youngstown, Ohio, since May, 1888, retires on January 1, under the retirement rules of the company. He has been in the service of this road since February, 1879, and for many years served as chief clerk and joint freight agent of the Pittsburgh & Lake Erie and the Erie.

Fred E. Signer, whose appointment as general eastern freight agent of the Lehigh Valley, with headquarters at New York, has already been announced in these columns, was born at Buffalo, N. Y. He began railway work in 1886, as clerk with the Buffalo, New York & Philadelphia, now a part of the Pennsylvania Railroad. He was then consecutively in the service of the Chicago & Atlantic, now a part of the Erie, at Chicago, the Southern Pacific, at Los Angeles, Cal., the Chicago & Alton, at Chicago, and the Wabash at Chicago. From 1898, to May, 1900,

he was board of trade representative of the Wabash, and then for about two years was agent of the Wabash & Lackawanna Despatch. He was then general freight and passenger agent of the Cincinnati, Richmond & Muncie, now part of the Chesapeake & Ohio of Indiana, until 1903, when he became general manager of the Lehigh & Wabash Despatch. In January, 1906, he was appointed assistant general freight agent of the Wabash at St. Louis, Mo., and the following November became general freight agent of the Wisconsin Central at Milwaukee, Wis., and later at Chicago. He was general freight agent of the Minneapolis, St. Paul & Sault Ste. Marie following the absorption of the Wisconsin Central by that road, in charge of the Chicago division, remaining in that position until 1910, when he was appointed commissioner of the Association of Lake Lines, with headquarters at Buffalo, N. Y., which position he held at the time of his recent appointment as general eastern freight agent of the Lehigh Valley, as above noted.

Engineering and Rolling Stock

C. H. Seabrook, superintendent of machinery of the International & Great Northern, with headquarters at Palestine, Tex., has resigned, effective January 1.

C. E. Bryan, superintendent of the Ohio River division of the Baltimore & Ohio at Parkersburg, W. Va., has been appointed division engineer of that territory.

Harry Bortin has resigned as assistant to general secretary of the Presidents' Conference Committee on Valuation, and after January 1 will engage in private practice, specializing in valuation work. He was formerly engineer in charge of the valuation department of the Union Pacific.

E. Ben Carter, superintendent of maintenance of way of the Florida East Coast at St. Augustine, Fla., has been appointed chief engineer, with headquarters at St. Augustine, and his former position has been abolished. C. S. Coe has been appointed engineer of maintenance of way, reporting to the chief engineer.

C. E. Brinser, division engineer of the Camden Terminal division of the Pennsylvania Railroad and the West Jersey & Seashore at Camden, N. J., has been appointed division engineer of the Williamsport division of the Pennsylvania Railroad, with office at Williamsport, Pa.; J. T. Skillman, division engineer of the New York, Philadelphia & Norfolk at Cape Charles City, Va., succeeds Mr. Brinser, and M. W. Clement, supervisor of the Pittsburgh division at Conemaugh, Pa., succeeds Mr. Skillman.

H. Cramer, road foreman of engines of the Seaboard Air Line at Savannah, Ga., has been appointed supervisor of locomotive operation of lines south of Columbia, with headquarters at Jacksonville, Fla., and T. U. Brown has been appointed supervisor of locomotive operation, lines north and west of Columbia, with headquarters at Hamlet, N. C. J. R. Bissett has been appointed road foreman of engines of the South Carolina division, with headquarters at Savannah, Ga., and the River Junction line formerly under the supervision of the road foreman of engines of the Florida division is now under the supervision of the road foreman of engines of the South Carolina division. A. E. Hopkins, road foreman of engines of the North Carolina division at Hamlet, N. C., has been transferred to the Alabama division in the same capacity, with headquarters at Americus, Ga., and W. W. Payne has been appointed road foreman of engines of the North Carolina division, with headquarters at Hamlet, succeeding Mr. Hopkins.

OBITUARY

George M. Sargent, general agent of the San Pedro, Los Angeles & Salt Lake at Chicago, died suddenly at his home in that city on December 27.

Franklin Fairman, formerly auditor of the Illinois Central, died at his home in Chicago on December 26, aged 81 years. Mr. Fairman was connected with the Illinois Central from 1855 to July, 1904. He filled minor positions until 1862, when he was made assistant general freight agent. Later he was successively auditor of freight accounts, freight auditor, and auditor of freight receipts until November, 1900, when he was appointed auditor, which position he held until his retirement in July, 1904.

Equipment and Supplies

LOCOMOTIVE BUILDING

The Illinois Central has ordered 25 switching locomotives from the American Locomotive Company.

The Tuscarora Valley has ordered 1 ten-wheel type locomotive from the Baldwin Locomotive Works.

The Cambria & Indiana has ordered 1 Mikado type locomotive from the Baldwin Locomotive Works.

The Nashville, Chattanooga & St. Louis has ordered 10 Mikado and 6 Pacific type locomotives from the Baldwin Locomotive Works.

CAR BUILDING

The Wisconsin & Michigan is in the market for 40 box cars.

The Lake Superior & Ishpeming is in the market for 400 ore cars.

The Grand Rapids & Indiana is in the market for 6 70-ft. steel passenger coaches and 1 70-ft. postal car.

The Atchison, Topeka & Santa Fe has ordered 100 10,500-gal. tank cars from the Pressed Steel Car Company in addition to the 100 recently reported.

The Union Tank Line has ordered 500 6,500-gal. capacity tank cars from the Standard Steel Car Company, in addition to the 500 cars reported last week.

The Chicago Great Western has just purchased 100 second-hand coal cars from the Pennsylvania Coal & Coke Corporation. This order is in addition to a recent order for 300 similar cars.

IRON AND STEEL

The New York Central Lines are in the market for 44,000 tons of steel rails.

Kasara Railway Tunnel Near Bombay.—A railway tunnel 1,507 ft. in length is now being constructed for the Great Indian Peninsular Railway in the Western Ghats, about 100 miles from Bombay. The contractors, Pauling & Co., of Bombay, began work on the tunnel by machine drills on December 6, 1913. To expedite the work two shafts, one of 101 ft. and the other of 89 ft. were sunk. The headings met on July 8 of this year, construction having progressed at the rate of 215 ft. per month. It is expected that the work will be completed in July, 1915. The tunnel is being worked out on the Belgian system—by opening out the top section first, inserting the arching where necessary, and taking the lower part out subsequent to formation. The tunnel will render unnecessary a reversing station now required on account of heavy grades.

The Fuel Supplies of the Railways of New South Wales.—The railways of New South Wales are at present using about 1,250,000 tons of coal per annum, and the government has more than once expressed the opinion that it would be a good thing if a state-owned mine were worked for the production of this coal. Mr. Cann, minister for mines, in a recent speech, said that the government really needed three collieries. Tests had been made on 40,000 acres of land held by the Crown, near Lithgow, and good coal had been proved. In the South Coast district the Crown had reserved all the mineral rights under the National Park area, and there was nothing to prevent them having a mine there that would put out 2,000 tons a day. The Sydney city council is also inviting applications for the sale to the council of a coal mine within 120 miles of Sydney, or for a contract extending over a long period. Among local coal-owners neither project is regarded as being very promising.—*The Engineer.*

Supply Trade News

The General Railway Signal Company on January 1 will move its New York office from 55 Liberty street to 30 Church street.

The Nachod Signal Company, Inc., has moved its offices from 50 Church street, New York, to 4777 Louisville avenue, Louisville, Ky.

Fred N. Baylies, assistant sales manager of The Aluminum Company of America, with offices in Chicago, has been appointed eastern manager of The P. & M. Company, with headquarters at 30 Church street, New York City, effective January 1, 1915. Mr. Baylies has been a director of The P. & M. Company since its incorporation.

By a recent decision of the directors of the Pullman Company, the work of building one steel sleeping car a day will continue throughout the winter months. Because of the small demand for cars during the past few months a discontinuance of this policy had been considered, but the recent decision will afford work to the men during the winter.

The T. A. Willson & Co., Inc., Reading, Pa., was awarded the grand prize at the Second International Exposition of Safety and Sanitation, held at the Grand Central Palace, New York, from December 12 to 19. The award was given to the company in recognition of the merits of the Willson eye protectors, namely the Willson Safety Glass, the New Willson Goggle and the Albex Eye Protector.

TRADE PUBLICATIONS

BOILER TUBE CLEANERS.—The Wm. B. Pierce Company, Buffalo, N. Y., has issued a circular entitled "How to Clean Arch Tubes Clean," which describes the Dean boiler tube cleaner and explains how it does its work. This boiler tube cleaner has been standardized by the Illinois Central.

PORTABLE ELECTRICALLY DRIVEN TOOLS.—The Neil & Smith Electric Tool Company, Cincinnati, is now sending out catalog No. 4, describing and illustrating the company's line of Ideal Portable Electrically Driven Tools. Included are various types of grinding tools, electric drills, electric portable screw drivers, etc. The catalog describes each appliance in detail and is well illustrated.

ROLLING RAILS.—The Lackawanna Steel Company has just issued a booklet describing in detail the deseaming process for rolling rails by which the outer surface of the rail bar is milled off by a special machine, thereby removing the larger part of the seams, which are otherwise carried into the finished rail. This process was described by Robert W. Hunt in our issue of December 4. The booklet is well illustrated.

ELECTRICAL APPLIANCES.—The Western Electric Company is now distributing the first edition of its 1915 Electrical Supply Year Book in the form of a most comprehensive catalog of the goods handled by the company, bound in cloth and containing over 1,200 pages. The book contains between its covers illustrations and price lists of all sorts and kinds of electrical instruments, its many sections being devoted respectively to Interphones and Accessories, Power Apparatus, Protective Apparatus and Switchboard Accessories, Measuring and Testing Instruments, Batteries and Accessories, Electrical House Goods and Novelties, Lighting Fixtures and Accessories, Wiring Devices, Knife Switches, Fuses and Cut-outs, Wire, etc. The catalog is a radical departure from accepted practice in two ways. It is the intention of the company to issue the book annually, whereas the practice in the past has been to issue a new catalog not oftener than once in three years. In addition, and perhaps more important, the price lists have been entirely readjusted so that now one discount is made to apply to nearly the entire line of electrical appliances, in place of a different discount for almost every different class of apparatus. The book is remarkably well edited up and will undoubtedly prove valuable to the buyer of electrical supplies.

Railway Construction

ARKANSAS MINING & DEVELOPMENT COMPANY'S LINES (Electric).—We are told that this company expects to let contracts early in 1915 to build an electric line from Hoxie, Ark., west via Portia, Black Rock, Denton, Smithville, Nelsonville, Poughkeepsie, Evening Shade, Zion, Lacrosse, Melbourne and Newburg to Calico Rock, 72 miles. A branch is also projected from Nelsonville southwest via Shelbyville and Cave City to Batesville. The plans call for building a total of about 130 miles. J. W. Myers, Nashville, Ark., may be addressed. (September 18, p. 549.)

BIG HORN CANYON IRRIGATION & POWER COMPANY (Electric).—We are told that location surveys have been finished for the line to be built from a point near Custer, Mont., to Big Horn canyon, 68 miles. John J. Harris, president, Hardin. (February 27, p. 451.)

CANADIAN NORTHERN ONTARIO.—An officer writes that the company has projected a line from Toronto, Ont., to Thorold and Niagara Falls, Ont., 79.63 miles.

CANADIAN NORTHERN QUEBEC.—An officer writes that surveys are being made to build an extension from Huberdeau, Que., to St. Remi, eight miles.

COLUMBIA & NEHLEM.—An officer writes that this company during 1914 finished work on a section of eight miles from Columbia, Ore., towards the Nehlem river. In addition 18 miles are now under construction to Nehlem, on which grading work will be completed ready for track laying in about 30 days.

MINNESOTA, DAKOTA & WESTERN.—An officer of this company, which operates a line from International Falls, Minn., to Nakoda, also to Pelland, Laurel and Loman, writes that the company has given a contract to the Minnesota & Ontario Power Company to build an extension from Littlefork, south to Craig, 45 miles.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—An officer writes regarding the report that a line is to be built from Guntersville, Ala., via Warrenton to Bean Rock, that the company has made some surveys near Guntersville, but it is not probable that the work will be carried out in the near future, as the improvement has not yet been authorized.

PACIFIC ELECTRIC.—Work on the extension from Arlington to Corona, Cal., 7.75 miles, is about 50 per cent completed. The average cut a mile on this extension will be about 3,000 cu. yd., and the average fill 3,500 cu. yd. The maximum grade is 0.95 per cent, and the maximum curvature is 3 deg. There will be no bridge work other than a few culverts which will be put in by company forces. The grading contract was awarded to Robert Sherer & Co., Los Angeles. This railroad company has also under construction extensions between Hawthorne and El Segundo, Cal., and from Santa Ana to Orange, Cal.

PENSACOLA, MOBILE & NEW ORLEANS.—An officer writes that this company is building with its own forces a 25-mile section from Pemono, Ala., to Mobile. E. M. Laughlin, Pensacola, Fla., may be addressed.

PORTLAND & OREGON CITY (Electric.)—This line is being built between Milwaukee, Ore., and Oregon City, a distance of 16 miles. Work is about 75 per cent completed and is being done by company forces.

RHODE ISLAND COMPANY (Electric).—An officer of this company, which operates electric lines in Rhode Island and Connecticut, writes that during 1914 the company built 5.28 miles of first track and .85 miles of second track at different locations in Rhode Island.

SAN PEDRO, LOS ANGELES & SALT LAKE.—Maps for a proposed line to extend through the Angeles forest reserve, California, have been filed by this company. However, construction work will not begin for a time.

SOUTHERN RAILWAY.—An officer writes regarding work on the extension of the Wauhatchie Railway that the line is being

built from Wauhatchie, Tenn., the northern terminus of the rails of the Alabama Great Southern, to a connection with the Lookout Mountain Tunnel line of the Southern Railway. A large amount of the work was done some years ago, but the line was never placed in service. The Southern Railway is now putting the tunnel line into shape and some double track is also being constructed on the Belt Railway of Chattanooga which, in connection with the Wauhatchie extension, will provide a double track line from the Chattanooga terminal station to Wauhatchie, six miles, enabling the Alabama Great Southern to enter Chattanooga over its own tracks and those of the Southern Railway instead of using the tracks of the Nashville, Chattanooga & St. Louis as at present. With the completion of the new line the Memphis division trains of the Southern will also use this new route between the Chattanooga terminal station and Wauhatchie, but will continue to use the tracks of the N. C. & St. L. between Wauhatchie and Stevenson, Ala.

THREE FORKS, HELENA & MADISON VALLEY.—An officer of this company, which started work in 1912 on a line from Helena, Mont., south via Radersburg, Three Forks and Ennis to Yellowstone Park, about 150 miles, writes that no work has been carried out during the past year. Grading has been finished on 20 miles, but no track has yet been laid. The company expects to resume work and complete at least 25 miles, early in 1915. E. A. Tennis, president, Three Forks, Mont.

WARREN, JOHNSVILLE & SALINE RIVER.—An officer writes that work is now under way building a five-mile logging line for the Bradley Lumber Company from Johnsville, Ark., towards Peters Lake. The company is carrying out the work with its own forces.

RAILWAY STRUCTURES

APPLETON, WIS.—The Chicago & North Western is preparing plans for a single track bridge across the Fox river near Appleton, Wis.

JACKSONVILLE, FLA.—The Railroad Commissioners for the State of Florida have issued an order requiring the railroads interested in the proposed new union terminal station at Jacksonville to build on the Myrtle avenue site, instead of at Lee street on the site of the present station. The railroads have been given until May 1, 1915, to file additional completed yard plans if desired. (February 6, p. 297.)

ST. CATHARINES, ONT.—A contract for the steel superstructure of the St. Paul street high level bridge over the old Welland canal has been given to the Canadian Bridge Company, Walkerville, at $91,000. The contract includes rails and track fittings. The bridge is to carry tracks for operating street railway cars.

SHELBY, N. C.—Bids will probably be asked for about March 1, to build two bridges on the proposed line of the Shelby Northern from Shelby, N. C., north to Casar, 21 miles. S. S. Royster, president. C. R. Poole, Rockingham, N. C., is interested.

BAVARIAN RAILWAY STATISTICS.—A recent British consular report on the trade of Bavaria for 1913 and part of this year contains some interesting information on the state railways of that part of Germany. At the beginning of this year, the total length of the state system was about 4,950 miles, of which slightly under 120 miles were built during 1913. The report mentions that only a few miles of purely local lines have been added since the beginning of the present year, and it is to be assumed that new construction is now entirely at a standstill. Complete details of receipts and expenditures are apparently only available down to 1912, when the revenue amounted to $76,029,840, and the expenditure, "including amortization and interest on invested capital," was $71,077,500. The net revenue is thus returned at $4,952,340, as compared with $5,569,560 in the previous year. In three successive years a total of $3,450,600 has been voted for electrification, of which more than half, $1,846,800 to be precise, figured in the 1914-15 budget. It may be doubted whether the government will now be able to commit itself to this expenditure. During 1912, the state railway administration paid over $170,100 as compensation in respect of accidents due to the negligence of employees. As the annual average for the past five years amounts to about $243,000, there has probably been an improvement in this respect.

Railway Financial News

CHICAGO, ROCK ISLAND & PACIFIC.—It is understood that the company has made arrangements with New York bankers for the renewal of a loan of $2,500,000, which matured December 31, and which was negotiated in June. The extension runs for three months, with interest at 6 per cent.

GREAT NORTHERN.—The lease of the United States Steel Corporation ore lands by the Great Northern Ore Company expired on December 31. It was decided a considerable while ago not to renew the lease.

LAKE SHORE & MICHIGAN SOUTHERN.—See New York Central Railroad.

LEHIGH VALLEY.—Vice-President Smith is quoted as saying that no immediate issue of bonds on the terminal at Buffalo is contemplated. The plan is to make a mortgage on these terminals, but no action will be taken in the immediate future.

NEW YORK CENTRAL RAILROAD.—Application has been made to list on the New York Stock Exchange $249,590,500 stock of the New York Central Railroad, which is the name of the new company which has taken over the New York Central & Hudson River and the Lake Shore & Michigan Southern. The first meeting of the board of directors of the new company was noted in these columns last week.

The $249,590,500 represents the amount of the new stock to be issued at once. The consolidation plans provided that $50,409,500 should be retained in the treasury, making $300,000,000 in all. The $249,590,500 stock which the New York Central Railroad seeks to list is to be devoted to an exchange of stock on the following basis: New York Central & Hudson River Railroad stock, par for par, $225,581,066; Lake Shore & Michigan Southern Railway minority stock, $4,706,900, five shares of New York Central for one of the Lake Shore, minority stockholders in the other subsidiaries, $574,934.

NEW YORK CENTRAL & HUDSON RIVER.—See New York Central Railroad.

TOLEDO, ST. LOUIS & WESTERN.—The court has authorized the receivers to pay the semi-annual interest due January 1 on $9,500,000 prior lien 3½ per cent bonds.

WEST JERSEY & SEASHORE.—A meeting of the stockholders has been called to authorize an increase in the capital stock of the company by $3,000,000 and the issue of $13,000,000 general and refunding mortgage bonds. The Pennsylvania Railroad controls the company through stock ownership and will receive new stock to the extent of about $2,000,000 to pay off advances to the company.

RUSSO-SWEDISH RAILWAYS.—The Stockholm newspapers report that Russia has approached the Swedish government respecting its attitude on the question of connecting the railway systems of the two powers by a bridge at Karungi, a city situated on both sides of the frontier formed by the River Torne. The eastern part of Karungi belongs to Finland and the western to Sweden. A railway is now in course of construction on the Finnish side, between the cities of Torneaa and Finnish Karungi, opposite the terminus of the Swedish railway system. It is understood that the Swedish government has replied that it is necessary to place the matter before the Swedish Riksdag.

ELECTRIFICATION IN ITALY.—In order to operate the extensions of the electrically equipped sections of the Italian state railways now under construction, 34 new 3,000-volt three-phase 16⅔-cycle locomotives have been ordered by the government—18 of the 4-6-4 type, weighing 84 tons, from Brown, Boveri et Cie., and 16 of the 2-6-2 type, weighing 68 tons, from the Italian Westinghouse Company. Both are driven by side-rods from two motors, jack-shafts at the ends being employed in the former, but not in the latter. The motors develop 1,300 h.p. each at 45 miles an hour. By a combined arrangement of pole-changing and cascade connection four economical speeds are obtained, namely, 22, 30, 45 and 60 miles an hour respectively.